THE

NORTH AMERICAN

Medical and Surgical Journal.

APRIL 1828.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Observations on Congenital Club-Foot.* By HENRY NEILL, M.D. Physician Accoucheur to the Alms-House Infirmary.

Read before the Philadelphia College of Physicians.

THE congenital club-foot has deservedly claimed, and has received, the attention of physicians from the earliest period to the present time. On looking back into ancient writers, I was not a little surprised to find that HIPPOCRATES, in his chapter De Articulis, gives such general views respecting the nature of the deformity, and proposes so judicious a plan of treatment as proves that there has been very little improvement in this particular from his day unto the present time.

His general principle is that the congenital club-feet should be reconducted to their proper position by such gentle methods as one would model wax with the hand. His plan was, to have bandages sewed to the outer side of a sole of leather, opposite the little toe, and these brought upwards so as to raise the outer side of the foot, and thus counteract the muscles which had a tendency to draw the foot inward and upward.

So far as has come under my observation, the deformity appears to depend almost always on the relaxation of the muscles and ten-

dons on one side of the foot and leg, and the undue contraction of the other, so as to produce a partial luxation. For in every case which I have seen (with one exception) I could with my hand, restore the foot to its natural position, before the child began to walk. It is also of great importance, that the force applied should be gentle in its action, and the material used pliant in its nature. For when a strong force has been used, with unyielding materials, I have known convulsions produced in the child.

In the writings of those fathers in medicine who immediately succeeded HIPPOCRATES, I have not found any thing on this subject which is worthy of notice. AMBROSE PARE is the next author in whose writings I find any thing relating to this matter. His plan consists of laced half-boots open from the toe upward to the top of the boot and also open at the bottom, through the sole of the boot, as far as the heel. These were to be fitted nicely to the foot and laced up; but I do not see how this could prevent the feet from turning inward.

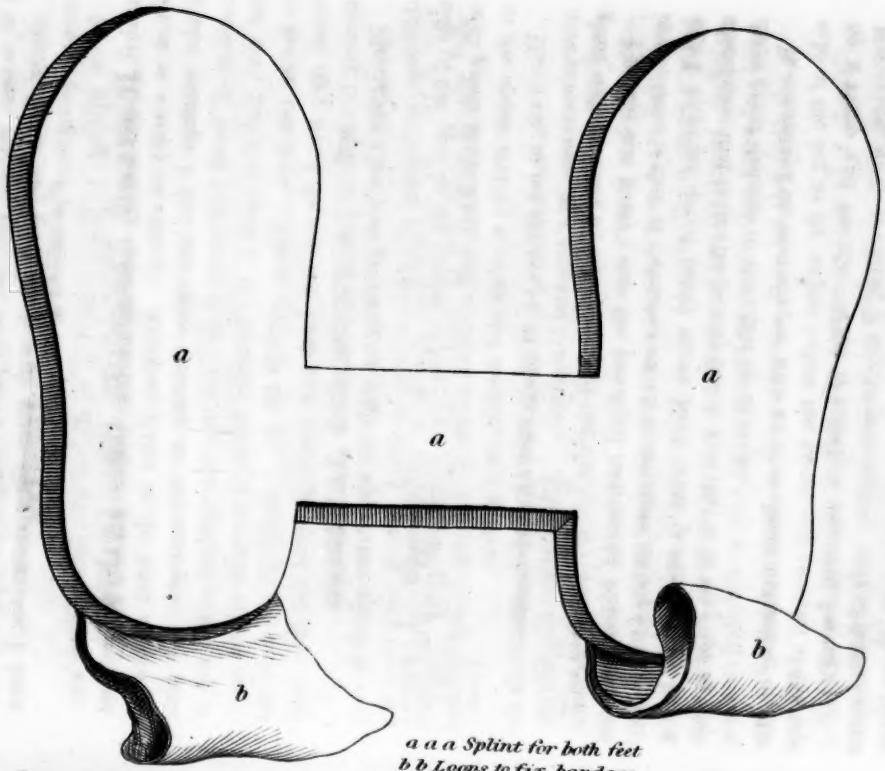
HILDANUS after him presents us with an apparatus which is very different, consisting of a plate of iron or shank, which rises from the side of the heel in the course of the fibula as high as above the knee, with joints at the knee and ankle to allow of walking, being secured at the upper end by a strap and buckle, or a garter.

HEISTER, in his system of surgery, refers to and recommends the instruments used by PARE and HILDANUS. After this the English surgical writers seem to have dropped the disease from their systems.

For the last thirty years the principal instrument which has been in use here is that of SHELDRAKE, an instrument maker of London; and I have no doubt many cures have been performed by it. I also know that it has frequently failed, and that it is very apt to produce great distress to the child by abrasion.

It consists of an iron slipper with an iron shank extending up the side of the leg as far as just below the knee, and secured at the top by a strap and buckle. This is merely a modification of that of HILDANUS, with very little, if any, improvement. In the Dictionnaire de Medecine publishing at this time in Paris, we have the description of an instrument which they call a modification of VENEL's used by M. D'IVERNOIS :—this also differs very little from that of HILDANUS, if I understand the description rightly.

More than twenty years ago Professor SCARPA of Pavia wrote and published a memoir on the congenital club-feet of children. In his book he mentions VENEL's machine, which has already



a a a Splint for both feet
b b Loops to fix bandage

been noticed, and also BRUCKNER's bandage, which, at the same time, he observes is only effectual in very slight deformities. He afterwards proposes a machine of his own invention in which springs are so placed, to act on the foot and leg, as gradually to overcome the deformity. Not having known of any instance in which this has been used, I am unable to judge of its merits. But on viewing the plates it appears more striking as an ingenious piece of mechanism than as a useful instrument.

Of later years, two gentlemen, Mr EARLE of London and Mr COLLES of Dublin, have given us papers and offered machines for the cure of such cases. That of Mr EARLE I suppose will be found too harsh to apply at the tender age of one or two weeks; and that of Mr COLLES has been tried in one instance in this city, and found ineffectual.

These, so far as have come to my knowledge, are the various methods which have been adopted for the relief of this most distressing deformity.

In the year 1813 it was my lot to have a child born with her feet turned inward and upward, so that the great toe was lying nearly on the tibia. As may be supposed, the situation of the child had immediate attention; and SHELDRAKE's apparatus, the only one with which I was then acquainted, was first thought of for trial. A child, at that time under the care of Dr GLENN, late of this city, had this instrument applied. I called to see it, and found it had not the effect of keeping the child's foot in a proper position; it was turned quite inward, and the skin much abraded by the strap and buckle which confined the upper part of the shank; on which being kept perfectly tight all the good effect of the instrument depended.

The mother also informed me that for the first two hours after its application it had the intended effect of keeping the foot straight, but after that time the strap would slip a little, and the least move of that would allow the foot to assume its former mal-position. Another objection was, that at the tender age of from one to four weeks, the limbs of the child would not allow of the application of a strap or band sufficiently tight without producing abrasion and swelling; which would make it necessary to lay the instrument aside for a time, when all that has been gained would probably be lost. I therefore preferred another plan which I had seen, consisting of a pair of laced boots of soft leather, open from the toe to the top of the boot, which had the soles projecting at the heel and toe a little beyond the upper leather, so as to admit a small screw to pass

through these projections, by which the feet were secured to a board at a small distance apart, and parallel to each other; and I could gradually turn the toes out as the feet improved. For a little while I thought this would be all that was necessary. But at the early period of one week, when it is of the utmost importance to make the application, the skin is so very tender that abrasion and ulceration will unavoidably take place from the slightest friction, and the feet at that age cannot be so securely fixed in the boot as to prevent all motion. I was consequently under the necessity of giving up this apparatus also.

It then occurred to me, that if I could secure the feet to a splint of a proper shape by bandages, so as to retain them in a suitable position, I should then avoid the abrasion of the skin and thus accomplish my object. I accordingly with my penknife made a splint similar to the one now presented to the college*, on which with a bandage I secured the feet. This had the most beneficial effect, without any of the former inconveniences from abrasion. In three months they were so much restored as to allow a pair of laced boots to be worn, with the occasional application of the splint for a week or two at a time, and at the end of nine months there were not the least remains of deformity. A few cases in which I have used the splint since have increased my confidence in this plan of treatment.

In 1814 a case of club-feet was presented to Dr Hewson. I had the pleasure of putting into his hands the splint which I had used with my child. He applied it to his patient and found it made rapid improvement, but met with considerable inconvenience from the ability of the child to disengage its feet from the bandages, which had also been troublesome to me. He has however suggested a remedy for this, by placing at the heel of the splint a loop of leather, through which the bandage was passed on making the first turn. This improvement has rendered the instrument so manageable, that in a case now under treatment the mother can apply it effectually as often as may be necessary.

His patient was greatly improved in three months, and in several cases he has been completely successful.

---

* Vide plate.

ARTICLE II.—*Case of Caries of the Tibia.* Communicated by JOSIAH R. HORN, M.D. of Stantonsburgh, North Carolina.

The subject of the following case was a coloured man, about sixty years of age, who had for many years followed the occupation of a farmer. I could not ascertain precisely the length of time he had been afflicted with an ulcer on the leg; but from the best information, it must have been upwards of twenty years. For a long period it was regarded merely as an indolent ulcer of the soft parts unconnected with any disease of the bone; but for three or four years, it assumed a more serious aspect, as walking became very painful; so much so, as to compel him to lead a sedentary life. He was finally so incapacitated for labour, that his master (for he was a slave), after trying various empirical remedies, and understanding that "I knew something about sore legs," was, in the year 1825, induced to place him under my care. The ulcer at that time was about three inches square, and was situated over the middle and anterior part of the tibia. He complained of a constant twitching sensation, as if a string were tightly drawn over its surface. The ulcer was callous, and very uneven. It was not tender to the touch. The edges were rounded and white. A large quantity of aqueous fluid was constantly secreted, as well as pus; for, on removing the dressing, a dense vapour would immediately arise, and the evaporation was so great, that the ulcer speedily became dry. On examination, the matter adhering to the dressings would, in a few spots, present the appearance of healthy pus; yet, generally, it would appear rather like sanies, tinging the dressings of a dark green or black colour. From these symptoms, a caries of the tibia was strongly suspected; but, as from examination this point could not be possibly ascertained, and as caries, commencing in the hard compact part of the bone, was not to be expected, it was deemed advisable to treat it as a simple indolent ulcer. Escharotics were applied, and afterwards BAYNTON'S plan was adopted, assisted by the various stimulating and emollient applications commonly used in such cases. This treatment did not even retard the disease in its slow and almost imperceptible progress. Amputation was then advised, but our patient positively refused to submit to it. I will here remark, that this is the first time I had ever seen an ulcer (not of a specific character) refuse to submit to the judicious application of straps and bandages: I say the *judicious* application of both;

for the loose and inaccurate application of either is equally injurious, as I have often witnessed. The straps, to be really useful, should extend quite around the limb, as originally recommended by Mr Baynton.

On the 5th of May last, our patient returned with all the symptoms of his disease aggravated. It was now apparent, that amputation must be submitted to, or death would speedily be the result. He had entirely lost the voluntary use of his limb, and could scarcely bear that others should move it for him. His ulcer was now nearly five inches in extent. In other respects it was as before described. He was much reduced; and a paroxysm of hectic fever appeared every evening. Desirous of preserving the knee joint, and supposing the disease of the bone extended no higher than the external sore, I performed the flap operation; taking off the limb an inch and a half above the lesion of the skin. During the operation, our patient's sufferings were comparatively slight. He did not complain on sawing through the bone, although, as will be seen, the tibia was much diseased at that place. This comparative exemption from pain was attributed to the loss of organization, and the consequent destruction of the nerves of the parts through which the incisions extended.

On dissecting the limb the following circumstances were noted: 1. A considerable quantity of fat beneath the skin, though none in the cellular membrane surrounding the muscles, &c. 2. The blood vessels and nerves supplying the foot appeared perfectly healthy; and so did the fascia and tendons. 3. The tibialis anticus and extensor communis were but slightly altered; but the gastrocnemius and soleus appeared more like gelatinous substance than muscles, having entirely lost the fibrous structure. There were occasionally interspersed oily tumours, and some of them seemed adherent to the tibia. 4. The structure of the tibia, for about two inches in its centre, was entirely changed; and instead of compact bone, a substance, not unlike to putrid cheese, was met with. It was very oily. Higher up and lower down than the space above specified, the bone retained its shape or form, though not its firmness. It could be easily cut with a knife, was very oily, and occasionally pieces of bone could be discovered: shewing, that the destruction of the tibia was not complete in those places. It was apparent, that the knife had not removed all of the diseased parts. The fibula was perfectly sound, as far as autopsic examination extended.

It would be useless to describe all the consequent symptoms and

treatment; as they were generally such as are met with in our systematic works. I shall, therefore, only notice such as were, in the treatment, attended by circumstances not a little remarkable. On the 9th day after the operation, that part of the wound, which was not covered by skin, became very irritable; bleeding on the slightest touch, and exquisitively painful. Powdered opium was thinly sprinkled on the ulcer. To my surprise next morning (for it was in the evening when it was applied) I found my patient labouring under the bad effects to be expected from a large dose of opium given internally. The pain and tenderness were completely removed. His pulse was weak and intermittent; his skin soft and clammy; his mind stupid though easily roused out of sleep. He was affected with subsultus tendinum, and an almost involuntary picking and scratching at the nose and face. His mouth was clammy, and his voice much altered. Retention of urine and costiveness were also present. Costiveness was removed by repeated doses of sulphate of magnesia; and the other symptoms gradually declined. The sore again becoming irritable, powdered opium mixed with rhubarb, one part of the former with two of the latter, was again applied; and with the same result. In fact, I repeated the application under so many circumstances, as to leave no doubt on my mind, that the symptoms above described were really the effect of the opium.

In the course of the subsequent treatment I was induced to apply rhubarb alone to the wound. The next day, my patient had a severe purging, accompanied by a bitter nauseous taste. I presented him with some rhubarb, and he immediately recognized it as the substance which he tasted so sensibly in his mouth. In fact, he stated, that he knew *certainly* it was the same. It was reapplied, and with the same result. I was led to make particular observations on this subject, from a case, related to me by a friend in whom I had unlimited confidence, of an elderly gentleman, who, in a fit of intoxication, received an extensive bruise on the posterior part of the thigh. In the course of the treatment, his attendant applied rhubarb, and with the result above described. My friend stated, that so confident was the patient that it was rhubarb he tasted in his mouth, that it was impossible to convince him to the contrary.

Will these facts throw any additional light upon the modus operandi of medicines?

After much attention, the ulcer was finally healed; but fistulous openings immediately appeared; and from their course, as well as the constant pain attending them, it was apparent that the disease of the bone was not even checked. A second operation was determin-

ed upon;—and, on the 10th of July, the thigh was taken off about one third up the os femoris. Our patient's sufferings were now most exquisite.

On examination, the part of the tibia, which, on the first operation, retained its form and part of its consistence, was now converted into the disorganized cheese like substance before mentioned. The fibula, no doubt, from being covered with a diseased mass, after the first operation, was now equally disorganized. The stump healed rapidly, and the patient is now quite well.

From the history of the case, and especially from the fibula becoming finally involved, I am induced to believe, that the disease of the bone was the effect, and not the cause, of the disease of the soft parts. If this supposition be correct, the necessity of paying more attention than is usually done to ulcers in the vicinity of bones must be apparent. At any rate, I hope, the above narrative will not be without its benefits.

ARTICLE III.—*Practical Observations on the Datura Stramonium.* By M. CUNNINGHAM, M.D. Arkansas Territory.

In the following remarks on this plant, I do not pretend to enumerate all the diseases in which it may be useful, but only to give an account of its use in my own practice.

The first disease in which I used the plant was the *asthma*. During the paroxysm of this distressing complaint, I have directed the seeds to be smoked until vertigo was produced, which almost invariably terminated the paroxysms. The beneficial effects of the plant, thus used, induced me to try its efficacy in preventing the attack. I accordingly directed my patient to smoke the seeds until vertigo was produced, whenever they felt the premonitory symptoms of the disease: this has uniformly prevented its occurrence. In several cases I have reason to believe that a complete cure has been effected. In the summer of 1818, I was called to see a woman, labouring under a violent attack of this disease. The smoking of one seed removed the existing paroxysm. She then informed me that for fifteen years she had been afflicted with the disease; that it was brought on, as she believed, by a sudden cessation of the

menses, from exposure to severe cold. For several years the attack was monthly; it then came on every two weeks, and for the last two years she has had an attack every week. Generally the paroxysm is slight, especially in the summer season, but occasionally it is very violent and frequently continues, especially in the winter season, for two or three days. In this case, with but a faint hope of a final cure, I directed the remedy to be used whenever she felt any symptoms of an attack. Six months after this time I again saw this patient. She had succeeded, by means of the remedy, in preventing any recurrence of the disease. As above stated, one seed produced vertigo when first used, now she smokes a pipe full. In the fall of 1819 I once more saw this woman, she still continued free from the disease and had not for several months used the medicine.

In *epilepsy*, although I cannot relate any cure, still I have realized the happiest effects from the stramonium. Twenty grains of the powdered leaves, three times a day, and of the saturated tincture, made of the bruised seed, a tea spoonful every six hours, were taken by a patient of mine, a boy 14 years of age. Previous to his taking the medicine he had from ten to thirty fits every twenty-four hours. The medicine produced first an abatement of the violence of the fits, then of their number, and when the ultimum dose was attained, a complete cessation of the fits for six weeks. The medicine was omitted by the friends of the boy; the fits returned and proved fatal. Notwithstanding the disease in this instance had existed for eight years and had attained to a great degree of violence, still, from the effects produced by the medicine, I was induced to hope for a favourable termination, if the remedy had been persevered in. The medicine in this case operated freely on the bowels, and the morning doses produced dilatation of the pupil, which continued but for a short time.

The stramonium will be found a valuable remedy in *inflamed ulcers*, and in those ulcers accompanied with great irritation, for which the conium maculatum has been found so highly useful. The bruised leaves may be applied, or, what in some cases answers a better purpose, the leaves wilted by pouring boiling water over them, and applied warm, will prove a very soothing application.

In *inflammation of the mammæ*, I have found the warm stramonium poultice a valuable discutient.

In *hemorrhoids*, the bruised leaves in some cases, in other cases

the warm poultice, have proved the most valuable remedy I have ever tried.

The disease to which I wish most particularly to call the attention of my medical brethren, and for which the stramonium is the most valuable remedy which I have known to be used, is a sequela of the fevers of southern climates and an almost universal attendant of the intermittents of this section of country. I mean the *enlargement of the spleen*, or ague cake, as it is generally termed. The immense size which this viscus attains is hardly known to practitioners in northern climates. The rapidity of its growth is truly astonishing; and although it occasionally, without any direct means, diminishes in size, so as to be no longer troublesome to the patient, it generally proves very difficult to remove, and is very grievous to the person afflicted therewith. I first saw this disease in Batavia, in the year 1804; the treatment I then recommended was that usually prescribed for chronic hepatitis. Since my residence in this part of our country, I have had frequent opportunities of treating this disease in the manner thus practised. In some cases I have been successful, in many I have failed. For the last three years, I have had recourse to the stramonium. *Externally applied*, I am warranted in saying that the leaves, wilted by boiling water and applied as a poultice over the enlarged spleen, as warm as the patient can bear, and renewed night and morning, will, if persevered in, completely remove the disease. It will be necessary to keep the bowels open, by taking a small portion of Epsom salts every night. By this means, I have not failed to remove the disease in a few days, in recent cases; those of long standing will require perseverance in the remedy for several weeks. In the following cases, a small variation in the treatment was rendered necessary from peculiar circumstances.

On the 9th of September last, I was called to see G. D., a man of thirty-five years of age, and found him labouring under an enlargement of the spleen, which extended nearly down to the ilium, and across the abdomen, two inches to the right of the umbilicus, and, as well as I could judge, the thickness was fully three inches. The disease had existed for several years, but had given no particular uneasiness except from its bulk, until four days ago, when inflammation, accompanied with great pain and soreness of the abdomen, had ensued. He had bled himself freely and had applied a large blister

without relief; the pain was very acute at night, in the morning it abated.

℞. Sal. Epsom. ℥ iii.; Sal. Nitri, ℥ ii.; mix; dissolve in ℥ viii. of water:—a table spoonful to be taken every hour, until the bowels are freely operated upon. Afterwards take a pill containing three grains of opium and two grains of tartar emetic. These medicines to be continued every day, until the pain be removed. The stramonium poultice to be applied night and morning.

On the 16th I again saw my patient—the spleen was no longer to be felt—the abdomen free from pain and soreness—colic pains were troublesome for several days after this time.

On the same 9th of September, I was called to a child of R. W., three years old—she complained of pain and soreness of the belly—the spleen occupied as much space as in the former case. There being some symptoms of worms I directed the following combination. ℞. Calomel. gr. vi. Gambogi. gr. vi.; mix; divide into six equal portions—one to be taken night and morning in syrup. The stramonium poultice to be applied night and morning. On the 16th the child was free from complaint—the spleen not to be felt.

The theoretical speculations of one living in so remote a section of our country would fail to interest those living within the focus of theory. I therefore content myself with the bare relation of facts.

The above paper from our distant correspondent, although containing little that is strictly new, promises, as he observes, to be very valuable in some sections of our extended country, and may be useful to every one, in recalling attention to the powers of the stramonium, once so famous and now comparatively neglected. Smoking the dried leaves, or seeds, has often relieved the paroxysm of asthma; but practical men have declared, that permanent relief is not afforded, and moreover that very decided injury has ensued,—the paroxysms returning more frequently and the disease sooner terminating unfavourably. On this point we would fix the attention of our experienced readers and request the result of their observations.

Of the efficacy of stramonium in hemorrhoidal tumours, we have had satisfactory personal experience; having prescribed the soft extract as a local application, some years since, on the recommendation of Professor Gibson, of the University of Pennsylvania.

How far the external use of this narcotic plant contributed to the

recovery of the above detailed cases of enlarged spleen may be questioned. We regret that a more full account of these and of other cases, apparently in the possession of our author, was not given. For agreeably to our views of the pathology of such affections and from what we have seen of their treatment, we should attribute much more efficacy to the internal alterative and purgative medicines administered than to the external application of the stramonium. Enlarged livers and spleens, the sequelæ of intermittent fevers, unfortunately to be observed here during the last four years, as well as to the south, appear to be dependent on two causes,—first the simple distention, or passive congestion, of the large venous vessels of these viscera, belonging as is well known to the portal system, and secondly on a chronic, or sub-acute, inflammation of a very mild character, as the cause or the result (we believe, the result) of the turgescence of its vessels. To unload the distended vascular apparatus of the liver and spleen, what practice promises to be more efficacious than a course of cathartics and alterative remedies, as antimony and calomel—all of which increase the secretions of the liver, pancreas, stomach, and intestines, and thus operate as powerful and direct evacuants from the very system of vessels involved in the disease? and are not the same remedies valuable in removing, on the same principles, the chronic inflammation, the cause or the consequence of the distention?—We think, that experience decidedly confirms these views and this treatment; to be assisted, often very materially, by other parts of the antiphlogistic course—particularly by cups and leeches—and also when there is much pain or soreness by fomentations, among which the hot wilted leaves of the stramonium may be peculiarly advantageous. The sudden disappearance of the hypochondriac tumours, noticed by our correspondent as well as by ourselves and others, cannot we think be explained on any other supposition, than that such tumefactions are mainly the result of venous engorgement and of course may be dissipated as soon as the vessels can be directly or indirectly unloaded.

ED.

ARTICLE IV.—*A Description of a Peculiar Ulcerated State of the Scrotum which had been mistaken for a Malignant Disorder of the Testicle.* By J. RANDOLPH, M.D.

I am induced to publish the history of the following case, from a belief of its being of so rare occurrence as to have escaped the notice of surgical writers, at least as far as I am acquainted. Dr PHYSICK informs me that he has seen in the course of his practice four similar cases, all occurring in foreigners.

On the 17th of September 1827, Mr ———, aged thirty years, attached to the United States navy, arrived in Philadelphia and presented himself to Dr PHYSICK and myself under the following circumstances. He informed us that he had been upon a cruise of twelve months in the Greek Archipelago and arrived in port Mahon about the 7th of May, at which time he first perceived an enlargement of the left testicle accompanied with some slight inflammation and a disagreeable sensation in the spermatic cord. The swelling continued nearly stationary, being very hard and without much pain, until he arrived in the West Indies in the beginning of July, about which time the tumefaction and inflammation increased considerably. Previous to his arrival in the West Indies, leeches had been twice applied without producing any change for the better. A few days after his arrival an evident fluctuation could be felt about the middle of the anterior part of the scrotum over the testicle, and when apparently nearly ready to ulcerate, the surgeon of the vessel made two small punctures from which about a table spoonful of very thick matter was discharged. From this time until the beginning of August a thin discharge was kept up through the openings. He now returned to the United States, and being in Richmond, Virginia, on the 10th of this month an ulceration of the scrotum took place near the punctures, which soon after joined an ulceration formed where the punctures had been made, constituting one large ulcerated cavity exhibiting at its bottom a white substance of considerable thickness. There was at this time a continual and large discharge of fetid matter. During Mr ———'s stay in Richmond, he consulted a respectable medical gentleman of that place, who deceived by the hardness of the tumor and the unfavourable appearance of the ulcer, believed it to possess a malignant character and proposed its extirpation. For some particular reasons the pa-

tient was unwilling to submit to the operation there; but determined with the advice of his physician to come on to Philadelphia and have the operation performed by Dr PHYSICK. He accordingly arrived in this city, as I have already said, on the 17th. I candidly admit that on my first seeing the condition of the parts, I was much disposed to entertain a similar belief respecting the malignancy of the disease with the gentleman who had seen it in Richmond, and supposed an operation would be necessary for its removal; but, fortunately for the patient, Dr PHYSICK's more valuable and extensive experience taught him better; he informed me, as I have before mentioned, that he had met with four similar cases of the same disorder, and had succeeded in effecting a cure in each of them. At this time the ulcer occupied about one third of the anterior face of the scrotum; its edges were thick, smooth, and rounded in some places, and jagged in others; its bottom was completely invested with a mass of coagulating lymph about one fourth of an inch in thickness, of an elastic, tough, fibrous nature, resembling very much the substance of which arteries are composed, as has been observed by Mr HUNTER of coagulating lymph wherever it has been completely deprived of its serum by pressure, an effect produced in this instance by the compression of the integuments caused by the distention and swelling previous to the ulceration. This lymph extended in some directions for a considerable distance under the sound integuments, adhering for the most part very firmly to the surface of the granulations underneath; but in other places when the edges of the ulcer were separated, it was withdrawn, and its elasticity was such as to raise it up and cause it to project a distance of half an inch or more, and it might be and indeed was mistaken for fungous granulations coming up from the substance of the testicle or tunica vaginalis. The testicle at this time appeared to be considerably larger than its fellow, which retained its natural size and was not implicated in the disorder; it was hard to the feel, and handling it occasioned but little pain; the cord was also enlarged and rather more painful. The scrotum and integuments were a good deal inflamed, in part probably owing to his journey. It was impossible in this case to assign any evident cause for the appearance of the disease, the patient could not recollect that he ever had received a hurt of any kind in the part, neither could it be attributed to any venereal taint. It may be proper to mention that he had suffered several severe attacks of pleurisy which left him a distressing cough, and his extremities were

also affected with rheumatism. From the appearances of the ulcer which I have just described, it will be perceived that it partook very much of an indolent character, and consequently the local applications which were made to it were such as would have a tendency to effect the change necessary for its cure, considered with reference to this particular kind of ulcer.

Treatment.—The patient's diet was directed more in regard to his cough than the affection of the scrotum; he was requested to live principally upon rice and the more nutritious vegetable articles. All stimulating drinks were prohibited. Five drops of the liq. arsenical. Fowleri were prescribed to be taken twice a day, he was requested to keep the scrotum carefully suspended, and a carrot poultice was directed to be applied to the ulcer. After continuing the carrot poultice for some time, and occasionally sprinkling the surface of the ulcer with carbon. ammoniæ*, I succeeded in detaching the lymph from the granulations below in parts of the ulcer which were exposed; but, inasmuch as this substance extended for some distance underneath the sound integuments, in order to get at this, on the 5th of October a portion of the scrotum covering the upper part of the ulcer of about half an inch in breadth was removed in the direction of the penis. The carrot poultice was then continued on the parts thus exposed. On the 12th I changed the carrot poultice for a bread and milk poultice: after continuing these for some time finding the separation very slow, I applied the powdered arsenious acid in the proportion of one part of the white arsenic to five parts of flower of sulphur. As soon as the parts destroyed by the escharotic sloughed off, I reapplied it.

Under this treatment, I soon had the pleasure of seeing the ulcer very gradually change its character: in those parts where the granulations were exposed they assumed a much more healthful aspect; other portions of the scrotum were removed in parts covered by the lymph. As soon as this substance was completely gotten rid of, I applied with good effect a preparation much used by Dr Physick, made by steeping rubigo ferri in nitric acid and then drying it†. After this the applications were varied from poultices to Mahy's

---

* Dr Physick has used this article with considerable advantage in the treatment of this particular kind of ulcer, both in the form of powder and fumigation.

† Dr Physick has also been in the habit of employing this preparation with much good effect as an application to obstinate chancres.

plaster, simple cerate, &c. Early in December the swelling and hardness entirely disappeared both from the testicle and spermatic cord, and in a week or two afterwards the ulcer was perfectly healed up. During the progress towards a cure, two sinuses formed: one which extended in a horizontal direction I laid open, and touched the surfaces with the nitrate of silver; to the other which extended downward I applied the arsenic with entire success.

With respect to the use of the arsenious acid as an external application I would observe, that soon after engaging in the practice of my profession I met with several cases of obstinate ulcerations which had resisted all the usual applications employed for their cure, and were finally treated in the most successful manner by the use of this article. From a knowledge of these cases I was disposed to set a high value upon the article as a remedial agent, and was not a little disappointed to find, upon consulting various authors, the many well attested facts and experiments which go to shew the deleterious circumstances which have resulted from its employment both internally and externally. It appears from the experiments and investigations of Mr Brodie, that death has been produced more rapidly from the external application of arsenic to an abraded part than when administered internally, that the inflammation, which is confined to the stomach and intestines, is more violent from its external application, and that this inflammation takes place before any inflammation of the wound. Mr Hunter and Sir Everard Home proved the same fact by an experiment made prior to Mr Brodie's. That the most injurious consequences may arise from the improper employment of active remedial agents is not a proper subject for discussion at the present day: if any evidence were necessary upon this point, it might be most unhappily furnished by the very article in question as it is used by empirics. Neither would I consider it decorous to doubt the validity of the interesting cases mentioned by Desgranges, Roux, Sir Astley Cooper, and others, in which death would seem to have resulted from the external application of arsenic, when employed by those competent to direct it properly. I would here only observe, that the above is contrary to all the information which I have been able to collect personally upon this subject, and in direct opposition to my own experience, which has been not a little in the use of this article. There is perhaps no person who has made a more successful and general use of the external application of arsenic than Dr Physick, and he informs me that he has never

in the whole course of his practice seen it productive of the injurious consequences which I have mentioned. Sir EVERARD HOME, in his work on ulcers, under the head of "ulcers which yield to the use of arsenic," says, "it is however a medicine that may be used with safety, both internally and externally, in many diseased ulcers, with the greatest advantage."

Dr PARIS, in his valuable work on Pharmacologia, states that "LIONARDO DI CAPO relates the case of a child killed by the violent vomiting and purging arising from a slight wound made in the head by a comb wet with oil in which arsenic had been infused for the purpose of killing vermin." Now I do not think it at all more remarkable that death should occur in consequence of a wound made in the head by the teeth of a comb, unassisted by the arsenic, than that the most dreadful symptoms should arise in consequence of the prick of a thorn upon the finger, or that death should ensue from a scratch upon the thumb from an oyster shell, both which circumstances I have known to occur*.

ARTICLE V.—*Case of Incipient Phthisis, in which Digitalis was successfully employed.* Reported in a letter to one of the Editors by SAMUEL B. SMITH, M.D. Surgeon in the United States Army.

Fort Delaware, Feb. 1, 1828.

Sir,

The following case, taken from my public journal, adds one more to the many interesting proofs we possess of the occasional efficacy of digitalis in removing incipient phthisis.

Fitzgerald, a recruit, aged twenty-one years, was assigned to a company of artillery, stationed at Fort Delaware, in May 1827.

---

* These observations embrace the question of *Endermic Medication*, now agitated by the profession, particularly in France. We would refer our readers, for the present, to the facts collected by us in Vol. II. of this Journal, p. 178, and Vol. III. p. 189, and also to Dr Horn's paper in the present number.

ED.

He had a graceful form, but a slender constitution, indicated by a fair complexion, with mild blue eyes and very black hair, a long neck and narrow chest. No suspicion however was entertained, at the time of his admission into the company, that he was particularly liable to scrofulous or pulmonic diseases.

A short time after he was first engaged on guard duties, he complained of pain in his left breast and a slight cough. As the pulse was hard and quick, he was bled, directed to take an infusion of senna and manna, to be blistered on the chest and to drink freely of flaxseed mucilage. He returned to duty in a few days in his usual health. When under this first treatment, he informed the surgeon that he had long been in a delicate state of health—subject to repeated attacks of catarrh which gave more or less pain in the chest; that on two occasions (one of which was recent) he had mucous expectoration streaked with blood, and that he had thereby been induced to abandon a sedentary occupation for the active duties of a soldier.

Towards the close of July 1827, the garrison left Fort Delaware and encamped, for some weeks, at the southern extremity of New Jersey, on the beach near Cape May.

On the morning of the 3d of August, Fitzgerald was reported ill, and removed to the hospital tents. He had been taken with a severe chill in the night and thence concluded that it was an ague, but other symptoms following soon after declared the disease to be pneumony. The pulse was unusually active and hard; the face highly flushed; the skin hot and dry, and to these were added headach, furred tongue, acute pain in the left lung, and incessant cough without expectoration. He was immediately bled ten ounces and ordered a brisk cathartic of neutral salts. He was bled daily eight ounces from the 4th to the 14th, and purged with calomel, soap and rhubarb every second day for the same period. This continued abstraction of blood was imperative, in consequence of the presence of inflammation and acute pain in the throat. The quantity of blood drawn might have been taken in a few hours in many cases with advantage, but this man was peculiarly organized and danger was to be apprehended from prostration, especially as expectoration might be profuse. On the 11th a large blister was applied over the chest, and during the prevalence of fever he drank freely of flaxseed lemonade in which moderate portions of nitre and tartar emetic were dissolved. The blood first drawn denoted vio-

lent membranous inflammation and it continued to be buffy until the 4th when it ceased. Pain and fever left him on the evening of that day, but mucous expectoration was very great, being upwards of nineteen ounces in thirteen hours. Pectoral mixtures containing opium, rich wine whey and nourishing broths during eight days rendered him sufficiently convalescent to walk abroad. He continued to improve in strength until the 2d of September, when, after unavoidable exposure, he was taken with quotidian intermittent, which yielded, on the 8th, to sulphate of quinine and opium. This intermittent led to very serious consequences, causing a return of pain in the chest, an increase of cough and expectoration which had before nearly subsided, and a distinctly marked fever every evening. The discharge from the lungs (which had been simple mucus) assumed a heavier and more purulent appearance. Calomel, opium, and squills, agreeably to the usual formulæ, were prescribed with a view to ptyalism, and the patient left for some time under the charge of an intelligent assistant who had earnest injunctions not to alter his medicines. When the surgeon returned to the garrison on the 25th, a fearful change had taken place. The face was angular from the contraction of the muscles; the lips pale and flabby; the eyes languid; respiration painful and humid. Expectoration difficult; the pulse small, quick, weak and intermitting; and cold clammy sweats, after short hectic paroxysms, completed the melancholy catalogue. A full opiate was given in strong warm brandy toddy, and frictions of hot brine and brandy were freely applied for several hours to the skin generally. These gave some relief, and he enjoyed comparative repose during the greater part of the night. Consumption, so anxiously apprehended and so faithfully contended against, was now unequivocally established. The case seemed hopeless, and the attending surgeon became anxious and embarrassed; mercury had already proved absolutely pernicious, and most of the known remedies could only be expected to act as palliatives and that for a short period. After serious inquietude, digitalis and opium were selected as a forlorn hope. They were completely successful. A rigid milk and mush diet was adopted and a strict regard to an unvarying temperature of the ward enforced. The whole chest was again blistered and the subjoined prescription exhibited every four hours.

℞. Pulv. Digitalis purp. gr. ¼.
Pulv. Opii, gr. ¼.
Pulv. Zingiber, gr. v.—M.

Mucilaginous drinks were freely given, and frictions of hot brine

and brandy made upon the sides and upper extremities every night. The medicines were increased, on the 3d of October, to half a grain each, and continued with great regularity every six hours until the 24th of October, when they were raised to one grain each. This quantity caused slight convulsive twitchings and prevented sleep. The half grain doses were therefore resumed and persevered in until he returned to duty.

The first visible favourable impression made by the digitalis was the cessation of the cold, hectic perspirations. These ceased in a few days after its first exhibition. In thirty days such a change had been effected in his state as to leave no reasonable doubt of ultimate permanent relief. At that time the pulse was regular, temperate and comparatively full. The features had lost their unpleasing contraction. The eyes and countenance were animated. Respiration less painful. The cough greatly abated and the expectoration sensibly diminished in quantity and improved in aspect. On the 16th of November all pain, cough and expectoration had entirely ceased: and he remained a pleasing and memorable instance of redemption from imminent pulmonic danger by the use of digitalis.

ARTICLE VI.—*Experimental Inquiry on the Influence of the Pneumo-Gastric Nerves.* By EDWARD R. WARE, of Georgia.

There is nothing more frequently praised than the certainty of the evidence of natural truths. Each writer in his turn thinks his discoveries completely established, and arrays his alleged facts in an apparently resistless phalanx. But almost every one who elicits novelties is, in spite of his confidence, subjected to controversy and contradiction. His facts are denied, his experiments refuted, his conclusions declared inadmissible, and his veracity and philosophical honesty called into question. These reflections were suggested by a perusal of the written conflict respecting the influence of the eighth pair of nerves on digestion. The experiments of WILSON PHILIP, illustrative of the influence of the eighth pair of nerves on respiration and digestion, have been subsequently repeated by an English writer, BROUGHTON, and results diametrically opposite been

reported. In order to satisfy myself as to the cause of such discrepancy, and, if possible, to ascertain the truth, free from all bias or prepossession, I instituted the following course of experiments, assisted by Dr J. H. FINLEY and others of my medical friends.

Experiment 1.

After causing two rabbits of the same age and size to fast for the space of sixteen hours, I gave them as much parsley as they would eat. One of them I set at liberty. In the case of the other I divided the nerves of the eighth pair, about midway in the neck. The division was immediately followed by difficult respiration, soon attended with a croaking noise, and gradually increased until death supervened; which happened in six hours and a half after the operation. The other rabbit was then killed; and a comparative examination made. The stomach of the one subjected to the operation was much distended, the general mass of food had undergone but little change; that part which was in contact with the parietes of the stomach was altered in colour, and somewhat in consistence, resembling partially digested matter. The central parts retained their natural colour and odour, and resembled finely chopped parsley. The lungs were largely engorged with blood, but did not sink in water. The trachea and air cells contained a frothy fluid. The stomach of the rabbit not operated on was hard and contracted, and about half the size of that of the other. That part of digestion confided to the stomach was comparatively completed; for though all the contents had not passed out at the pylorus, yet what remained was a uniform chymous mass, more compact and dry at the pyloric than towards the central or cardiac portions. This experiment was satisfactory and conclusive, and was followed by six others of a similar nature, all of which gave uniform results.

Experiment 2.

A half grown cat was kept without food for twelve hours, and then one ounce and a half of raw beef was given. In fifteen minutes after, I divided the eighth pair of nerves. The usual symptoms followed, differing from those of the last experiments only in degree; respiration was deep, slow, and laborious, attended with a croaking noise, and apparent efforts to vomit, which continued to increase for ten hours, when from the great distress and prostra-

tion I was induced to kill it. Upon examination no change was perceptible in the food, except in the circumference, which had lost its livid hue, and resembled beef shortly after being placed in warm water. It had lost nothing in weight. The lungs were engorged with blood—and the trachea filled with frothy fluid slightly tinged with blood. This experiment was also confirmed by one other.

Experiment 3.

Having caused two rabbits of the same age and size to fast for sixteen hours, I allowed them as much cabbage as they could eat, after which I made a section of the eighth pair of nerves in each. One I set at liberty. The other, the hair being shaved, on either side, from the region of the stomach, I submitted to the influence of a galvanic trough, containing fifty pair of four inch plates—the intervals being filled with sulphuric acid and water, in the proportion of one of acid to sixty of water. A gentle and uniform twitching of the muscles of the trunk was kept up, by the occasional addition of acid, for six hours, at the end of which time (the animal being almost exhausted) it was killed by a blow upon the occiput. Examination being made, the stomach was found distended as in the preceding experiments: the external part of the contents was changed in colour and somewhat in consistency, so as to resemble a chymous mass; whilst internally it was as it had been chewed and swallowed. The lungs were engorged, though not quite so much as usual. During the process, the respiration exhibited the phenomena seen in the other cases. The trachea contained a frothy fluid. This animal eat nothing after the operation, and nothing was found in the oesophagus. In half an hour after (six hours and a half after the operation) the other rabbit died; the stomach and its contents resembled in every respect that of the galvanized rabbit. The lungs were more largely engorged with blood, which constituted the only apparent difference.

Experiment 4.

A rabbit, after fasting, was afforded as much parsley as it would eat; when the hair was shaved on the back, near the region of the stomach, and a small plate of tin bound thereon: the eighth pair of nerves were divided, and about a quarter of an inch of the lower section of each coated with tin foil. The tin foil and tin were con-

nected with the opposite poles of the galvanic trough, and a uniform effect kept up for five hours and a half, when the animal died. Its respiration during the process, the state of its stomach, food, lungs, and trachea, differed in no particular from those in the immediately preceding experiments.

Experiment 5.

Two rabbits were caused to fast for twelve hours, when there was given as much cabbage as they would eat. The one remained in its natural state. In the other the pneumo-gastric nerves were divided and submitted to the galvanic power as in the last experiment, and a uniform effect was kept up for seven hours, when the animal died. Upon examination it was found to differ in no perceptible degree from those in which the nerves had been divided. Whilst the stomach of the healthy rabbit exhibited the contents diminished in quantity, and in a completely chymous state, and in the pyloric portion comparatively dry and compact.

These experiments, made with much care, time and labour, serve to shew the great caution with which we should receive the accounts of even experimental inquiries. They afford results agreeing with those of Dr PHILIP, respecting the effect on digestion by the division of the par vagum; for by that section digestion is almost totally arrested; and although they would indicate partial action, it is so slight, that it may be justly attributed to the healthy secretions of the stomach poured out immediately preceding the operation. Although secretion, the alleged cause and as we believe the *primum mobile* of chymification, does not cease after the division of these nerves, but, on the contrary, appears to be augmented, yet, inasmuch as it is incapable of changing food to chyme, it must be morbid. Another apparent barrier to chymification is the deficiency of action in the muscular coat of the stomach, known from the violent and ineffectual efforts to vomit,—symptoms constant, and remarkable, particularly in cats,—and as proved in those rabbits which were permitted to eat after the operation, where food was found in the oesophagus itself. But when we endeavour to institute the galvanic irritation for that action carried on though continuous nerves, we cannot confirm either the facts or conclusions of PHILIP. Our results are entirely contradictory of his: and we are compelled to acknowledge our belief in the inaccuracy of his galvanic experi-

ments, and stand prepared to deny that there is yet any good reason for believing in the identity of galvanism and the mysterious principle of life.

Death, in all the cases here related, seemed to be caused rather by the state of the lungs than by that of the stomach; for the engorgement and obstruction in the organ of respiration put finally an entire stop to the access of air into the bronchial cells, and suffocation ensued.

As the object of this essay was to investigate a fact rather than an opinion, it is necessarily short; for a few experiments, though troublesome and difficult, have furnished results which afford no opportunity for creating a lengthened dissertation.

ARTICLE VII.—*Case of Chronic Headach successfully treated with Fowler's Arsenical Solution.* By JOHN C. OTTO, M.D. one of the Physicians of the Pennsylvania Hospital.

I designed to add to my note to the letter of Dr ALEXANDER on the use of arsenic in the case of Major Harris, contained in the eighth number of the North American Medical and Surgical Journal, the following case, but could not place my hand on it at that time.

Y. K. at the age of eleven years, was attacked, without any assignable cause, with violent headach that came on daily. His constitution was good, and with this exception he had been unusually healthy through life. When I first saw him, March 1819, it had continued three years and had been gradually progressing in violence, but he thought he suffered rather most in summer. There had been no respite to the complaint, except during a few days when he was taking emetics. The paroxysms did not return at the same hour, and could be brought on, at any time, by exposure to the sun, over exertion, putting on a tight hat, or by any thing that bound his head considerably, which was rather disproportionably large. Ultimately the attacks lasted several hours, but varied a good deal both as to violence and duration, and were never accompanied by nausea or fever, nor seemed to depend on any thing that had been eaten. The

pain was not confined to a small part, as is very often the case in periodical headach arising from the cause of intermittent fever, nor like hemicrania did it occupy one side of the head: the forehead suffered most and was generally warm, but no part was entirely exempt from pain. He had taken very little medicine, for a physician of eminence, in the part of the country from which the family had lately removed, gave an assurance that it would be to no purpose, and great reliance was placed on his opinion. The parents were unwilling to have recourse to any thing painful, or even disagreeable, without a prospect of benefit. During two years the child continued at school, but afterwards he was obliged to lay aside his studies. His case was stated to me while in attendance on his brother. I represented to them the impropriety of abandoning him to the operation of nature, which had been of no service, and that it was time enough to despair of relief when the resources of medicine had been fairly tried and failed. Upon their consenting to his becoming my patient, I directed five drops of Fowler's solution of arsenic to be given him three times a day. This treatment was continued two weeks without any improvement in his complaint, nor was any nausea, griping, or swelling of the eyelids or face, produced. A day or two afterwards, without his taking any other medicine, he ceased to be attacked, nor was there any subsequent return of the disease for two years, when the family removed to a distant part of the country to live, and I have not heard from him since. He was directed to be particular to avoid all exciting causes, to keep his bowels open, and to use but little animal food. As the good effects of medicine are not always immediate, I am induced to think that the arsenical solution ought to be considered as having been instrumental in relieving him.

ARTICLE VIII.—*Observations on Affections of the Mammæ, liable to be mistaken for Cancer.* By JOSEPH PARRISH, M.D. one of the Surgeons of the Pennsylvania Hospital.

From much experience in cancerous affections of the breast, I have been led to the conclusion, that derangements of structure in

that organ, of a nature comparatively innocent, are often mistaken for scirrhus. Not a little of the success which has been attributed to surgical treatment in this terrible complaint, has, I believe, arisen from its direction to such cases. My own opinion is that real cancer is a constitutional affection, and that, in the greater number of instances, even extirpation affords but a slight chance of ultimate safety to the patient. On a future occasion I may perhaps offer the results of my observation on this point:—at present my object is to illustrate, by a detail of facts, the liability of the surgeon to misapprehend the character of tumours in the mamma, and thus unnecessarily to subject the female to severe pain, and to a mutilation which must always be unpleasant, and to a young person often very inconvenient. The inexperienced practitioner may thus be placed upon his guard, and by learning to be exceedingly cautious before resorting to an operation in cases which are at all doubtful, may save his patient much suffering, and himself perhaps much mortification and regret. I have always been strongly impressed with the obligation under which the surgeon lies to avoid a too hasty use of his knife; and have believed that his skill is displayed less in the mechanical performance of operations, than in the employment of measures calculated to render them unnecessary. For my sentiments in this respect I am greatly indebted to our distinguished fellow citizen, Dr Physick, whose instructions in surgery I attended even before his connection with the University, and from whom, during the prosecution of my studies, and in frequent subsequent intercourse, I have derived information which has proved highly useful to me, not only in the particular matter which forms the subject of the present paper, but also in many others connected with the practice of my profession.

I will begin by stating, that even the natural structure of the mamma may be mistaken for scirrhus. Every practitioner who has often been consulted in the complaints of females must have observed, that in some women there is an unusual hardness of the breast, without any departure from a perfectly healthy condition. This hardness is occasionally attended with a lobular structure of the gland; and it is not uncommon for the young surgeon to confound this state of things with disease, and to suppose that he is handling a cancerous tumour, when the parts are in reality perfectly sound. Even the experienced hand is not always secure from such a mistake.

I recollect well the case of a lady of this city, who came under

the care of my lamented preceptor, the late Dr WISTAR, and myself, with pain in the breast. We made repeated examination, and though aware of the occasional hardness of the mamma, were convinced that we could feel a tumour. As the patient complained of much pain, which she referred to a particular spot, and this spot coincided with that in which we supposed the tumour to exist, we concluded to recommend an operation. The patient consented: but in the mean time her mind was so strongly impressed by a dream, in which she thought that a cure might be effected by the application of a certain nostrum, that she was unwilling to submit to the knife till the remedy had been tried. We were not very reluctant to suspend the operation: and it was agreed that she should be allowed time to satisfy her mind. Not long afterwards, Dr WISTAR was attacked by the illness of which he died; and the operation was on this account still further delayed. Sometime after his death, I was called in to see her. Upon making a strict investigation into her case, I was now convinced that the pain in her breast arose from a rheumatic affection, and that what had been taken for a tumour was nothing more than a portion of the mamma unusually firm. The idea of an operation was therefore relinquished: the pain gradually subsided under treatment calculated for the cure of rheumatism; and, though several years have elapsed, there has been no evidence afforded of the existence of cancerous disease.

In another case I was on the point of committing an error which would have caused me much uneasiness, and which I now mention in the hope that my experience may prove useful to others. In the year 1819, I was called to see a young woman with a small tumour in her breast, which so far presented the characters of scirrhus, that I conceived its extirpation advisable. The patient very willingly consented. At the time appointed I went to the house with two of my medical friends, who attended in order to witness and assist in the operation. Before proceeding to use the knife I placed my hand upon her breast, and was surprised to find, as I thought, that the tumour had much increased in size. My friends who were present also examined it, and thought they could feel a tumour of considerable magnitude. I had even traced the course and extent of the proposed incision and was about to commence the operation, when, almost by accident, I touched the real tumour, which remained exactly as when I first examined it. I had mistaken the natural hardness of the breast for scirrhous induration: and it may be readily

conceived how painful would have been my feelings, had I proceeded as at first proposed, and, after the operation, found in my hand a portion of the gland in its natural state, while the diseased structure remained untouched.

So much for the liability of mistaking a natural healthy condition of the breast for scirrhus. The difficulty of forming a correct judgment is much increased when tumours really exist. It by no means follows that every hard, chronic, painful tumour of the mamma is cancerous. In the young female, if the breast remain freely moveable, and the skin present the natural aspect, even though the ordinary symptoms of scirrhus be exhibited, there is much reason to hope that the complaint is of another character, and may be relieved without the necessity of an operation.

I have twice attended a lady of this city affected with a tumour in the mamma. On both occasions it was large, very painful, and of a chronic character, and caused much alarm to herself and her friends: but by the use of purging, low diet, and discutient applications, it was entirely dispersed.

In another instance, a young woman was brought from the country to the city, and placed under my care, with a tumour of the breast, accompanied with enlargement of the axillary glands. In this case the discutient plan was employed without any obvious effect. Dr WISTAR was called in consultation. It was resolved that the tumour should be removed, and the glands of the axilla dissected out. The time appointed for the operation was approaching, when I received a note from the Doctor, informing me that he was under the necessity of leaving the city the next day, and advising me not to allow his absence to interfere with our arrangement. But as the operation was likely to be a very serious one, I determined to delay it till his return, which was soon expected. A spell of very hot weather now came on, and as the patient was unaccustomed to the heated and confined air of the city, I feared that her health might be injured, and therefore recommended her to go into the country, and remain till the weather should become cooler. On her return, after a short absence, I found a very evident abatement of the tumour. This seldom, if ever, happens in genuine scirrhus, and I felt much encouraged as to the result of her case. Though the young woman herself was still desirous that something should be done, I determined, for the present, not to operate. Between one and two months afterwards, Dr WISTAR, who had returned to the city, again met

me in consultation; and it was our decided opinion that the complaint was considerably better. The case was one of great delicacy. The young woman was about to be married, and had a very natural dread of entering into the new state with a diseased breast. The circumstance was made known to us, and we were desired to decide upon the proper course—whether the operation should be performed, or the marriage should take place in her present condition. We gave the subject full consideration, and concluded to recommend that she should go home, and wait for a short time the result of that change which appeared to have commenced. Should the tumour increase, she might then come to the city and have it removed. She followed our advice. The complaint gradually disappeared; she was married; and when I last heard from her, was the healthy mother of several children. This is a case in which, had an operation been performed when first proposed, we should have honestly attributed to it the credit of the cure.

When in young persons, instead of a single tumour, there are two or more in the breast, the probability that they are not cancerous is still greater. It is not uncommon for practitioners to be consulted in cases of this kind. Sometimes both mammæ are affected, sometimes only one.

A young woman was sent from the country, supposed to have a cancer in her breast. Dr Physick and myself attended her. There were two tumours in one breast, and one in the other. We had before seen a case somewhat similar, in which the complaint had disappeared without an operation: but in the present, it was impossible to decide with certainty whether the tumours were cancerous or not, as they were not sufficiently advanced to display the requisite characters. We resolved, however, to postpone an operation till efforts had been made to discuss them. A low diet, with the use of saline purgatives, and a mercurial plaster to the breast were recommended: and the patient was advised to go home, and return to the city if there should be any increase of the complaint. Instead, however, of increasing, the tumours gradually diminished, and at length disappeared; nor have they since returned.

Scofulous affections of the breast not unfrequently occur, and are sometimes confounded with cancer. Several cases of this kind have fallen under my observation.

A young married woman, many years ago, was sent to me from Bucks county, under the impression that she had a cancer of the

mamma, which required an operation. Her breast was considerably enlarged, presenting an irregular surface, with redness of the skin. The axillary glands were also diseased. Considering that if the complaint were cancerous, it had proceeded so far that an operation would be of very doubtful success, I deferred it for a short time. Happily the tumour became soft, and fluctuation was observable. It was opened, and scrofulous matter was discharged. The patient returned to the country, and gradually regained her health. In this instance there was none of that contraction or wrinkling of the skin which generally accompanies genuine cancer when it has advanced to the surface. But as the disease is sometimes attended with a swelling of the breast and a smooth skin, this circumstance did not enable me to form a certain diagnosis. Subsequent observation, however, has taught me, that there are peculiarities in the appearance of a scirrhous breast, even when swollen and smooth, by which it may generally be distinguished. Instead of a diffused redness, I have usually noticed, under these circumstances, a stellated appearance of the skin—red spots being scattered like spangles over the surface. This peculiarity is so striking, that I believe I could now distinguish, by the eye alone, between such tumours and mere scrofulous enlargement. The experience acquired from this case was of great use to me in one which afterwards occurred.

Having noticed some mistakes of my own in the preceding pages, I may be permitted to allude to those of others; though in doing so, I wish to be considered as indulging no feeling of censoriousness. On the contrary, I entertain the highest respect for the individuals concerned, and, in alluding to the transaction, do not feel myself entitled to use that freedom with their names which I have employed in my own case. A most respectable young surgeon of this city got hold, as he supposed, of a case of cancerous mamma. As the axilla was involved, an operation was a very serious matter. I was invited to see the patient, but was prevented by other engagements. Another surgeon, however, of high standing in his profession, examined the case, and came to the conclusion that it would be proper to remove the breast. An operation was agreed upon, and I was desired to be present. When I arrived, the patient was seated in the chair; both surgeons had their aprons on; and the operator, with the knife in his hand, was just about to make the first incision. I had no sooner cast my eye on the diseased breast, than I was struck at once with the strong resemblance to the case which I have above

related. The tumour was large and moveable, and a chain of enlarged glands might be traced into the axilla. I was placed in a most awkward and unpleasant situation. On the one hand, a proper regard for the feelings of my professional brethren, for both of whom I had a high esteem, demanded much care: but on the other, the calls of humanity and duty were imperious, and could not be neglected. I took the young gentleman aside, and as delicately as possible imparted to him my conviction that the tumour was scrofulous. Naturally anxious to distinguish himself at this early period of his career, he seemed unwilling to relinquish the idea of an operation. In the mean time, however, our elder brother, who was a man of excellent judgment, had undertaken a more minute examination of the diseased mass than he had hitherto made; and found that not only were the glands of the axilla affected, but those also on the side of the neck; so that when we entered the room, he was fully prepared to unite with me in advising that the knife should not be employed; for even admitting that the disease might be cancerous, he was convinced that it had passed the bounds within which an operation could be successful. The difficulty of the case was thus much diminished. On looking at the tumour, I observed that in one spot the skin was discoloured; and applying my finger to the part, distinctly discovered fluctuation. At my suggestion the operator introduced his lancet, and pus, of that peculiar character which is found in scrofulous abscesses, issued from the wound. This settled the matter. Genuine pus, so far as I have observed, is never found in cancerous affections. All parties were now satisfied. The young gentleman afterwards informed me, that the complaint of the breast was ultimately relieved.

Sometimes deep seated abscesses of a scrofulous nature, form in the breast, and being attended with much pain, are liable, without care, to be mistaken for scirrhus. Two very interesting cases of this kind have occurred to me, both in young married women, with infant children.

The subject of the first case was sent to me from the country. She had been for several months affected with pain in her breast. Some treatment had been employed for her relief, but without success; and a tumour had formed. When I first saw her, I examined the breast carefully, and thought I could feel a deep seated, indistinct, fluctuation. This circumstance was sufficient to deter me from operating, till I had satisfactorily ascertained the nature of the

tumour. I stated to her friends my hopes that the complaint might prove to be scrofulous, and proposed that a lancet should be introduced into the tumour, in order to ascertain the fact. Even should I be disappointed in my opinion, little additional pain would be occasioned, and the operation might then proceed as well as though nothing had been previously done. Their consent having been readily given, I took the lancet, and in order that I might be certain to reach the affected part, plunged it up to the hilt in the breast, in the direction of the tumour. When I withdrew it, only a drop or two of blood followed, and I began to fear that my hopes had been unfounded: but the blood soon began to flow more freely, and a litttle pus made its appearance at the orifice of the wound. I enlarged the opening, and was delighted to perceive that scrofulous matter escaped freely. The parts healed; and the complaint ultimately disappeared, leaving the breast perfectly sound.

The second case was equally interesting. A worthy pious man, a methodist minister, came to the city some time ago with his wife, an interesting young woman, the mother of two children. Their circumstances in life were very slender, and it was important to the mother that she should be able to suckle her own children, as the expense of a wet nurse was greatly beyond their means.

Before coming to the city, she had been urged by several practitioners to have the tumour taken out: but the husband made up his mind, that before his wife should be subjected to so painful a mutilation, he would, at whatever expense, bring her to Philadelphia, and obtain further advice in her case. Dr SARGEANT was consulted, and called me in to see the patient with him. I immediately suspected that the complaint might be a deep seated scrofulous abscess; for I thought I could feel fluctuation; and yet any surgeon, not on his guard, might have been led into error, as the fluctuation was very indistinct. I obtained permission, as in the former case, to explore the tumour before attempting an operation. Scrofulous matter immediately followed the withdrawal of the lancet. The breast healed, and occasioned no further trouble to the patient.

I need not dwell upon the consequences of mistake in such cases as the above. Independently of the unnecessary pain and mutilation inflicted on the female, the mortification of the surgeon must be extreme, when, having removed the tumour, he cuts it open, and finds a collection of pus, instead of the expected cancerous structure. In all deep seated tumours of the breast, where the evidences of cancer

are not unequivocal, I would advise the adoption of the plan pursued in the instances above mentioned. An experienced surgeon, with a delicate sense of touch, can generally detect fluctuation, if there be a collection of matter: but should he be unable to do so, what is more safe and easy than to make a puncture with his lancet before commencing the operation. If an abscess exist, it is thus rendered evident; if not, and extirpation become necessary, no harm has been done. I believe that such cases have often been mistaken for cancer, and operations performed without the least necessity.

Cysts occasionally form in the breast which are totally free from any cancerous disposition. Within the last year, a middle-aged woman from the country came under my care, with tumour of the mamma. Upon a careful examination, I discovered an obscure, deep seated fluctuation. There were two tumours. I punctured them both with the lancet, and a serous fluid escaped. No unpleasant consequences resulted. Such an affection might have been readily confounded with scirrhus, and the mamma have been extirpated.

I will close the paper by observing, that we are liable to be deceived as to the nature of the action which sometimes takes place in the cicatrix, formed after the extraction of a cancerous tumour. If it be observed to enlarge, thicken, and assume a red colour, at the same time becoming tender and painful, there is reason to fear that the complaint has returned. But it occasionally becomes very painful, without undergoing any change in appearance or structure. In such cases the disorder is probably purely nervous, and a resort to the knife wholly unnecessary. I once witnessed a case of this kind under the care of another surgeon. The pain was so severe and continued, that it was determined to remove the cicatrix, under the impression that the parts beneath might be found in a diseased state. But they were perfectly healthy, and the pain, in all probability, arose from nervous irritation.

Article IX.—*Remarks on Phlegmasia Dolens.* By R. M. Huston, M.D.

In the conclusion of some observations on phlegmasia dolens, published in the eighth number of this Journal, it was announced as my intention further to illustrate the positions there laid down, by the detail of some cases which had fallen under my own notice; and to speak at the same time of the therapeutical management of the disease. This task I shall now endeavour briefly to perform.

Although the histories which follow may not be found to differ in many important features from those already published by various authors, they will not perhaps be found the less interesting on this account. This very sameness in the general symptoms of the disease, as observed by different individuals, goes to establish an uniformity in its character, which may lead to an uniformity of opinion and of practice, in regard to its pathology and treatment.

Case 1.

In the seventh month (July) 1816, I was called to attend R. B., then in labour with her first child. She was the wife of a farmer, twenty-six years of age, very fat, of short stature, and in the enjoyment of a high degree of health, the consequence of an excellent constitution, and habits of great industry, regularity and temperance. She was delivered, after twenty-four hours severe labour, of a living and healthy child. Her unusually great and protracted sufferings proceeded from her having a pelvis rather below the ordinary size, together with a very unyielding condition of the soft parts. To overcome this rigidity, she was bled to the extent of eighteen or twenty ounces; but without much apparent benefit; and her having never before been under medical treatment of any kind, rendered her unwilling to submit to that extensive loss of blood which my subsequent experience in such cases has convinced me to be necessary; and to enforce which, at that period, demanded on my part the possession of maturer years and a more established character. The patient was therefore left pretty much to the dictates of her own ignorance and inclinations; and although safely delivered, and without instruments or extraordinary assistance, it was after much suffering and exertion, a great part of which might, no doubt, have been spared by more judicious management.

During the first eight days subsequent to delivery, nothing remarkable occurred. There was a good deal of tenderness of the external soft parts, with general soreness of the abdomen, which appeared to be chiefly seated in the muscles. The lochial discharge was scanty, and the secretion of milk very limited. On the ninth day the patient complained of an increase of pain in the right side of the abdomen, extending over the right iliac region, and down into the groin of that side. In the afternoon she had shooting pains in the calf of that leg, with a sensation resembling cords drawing from thence to the affected groin, giving the feeling of soreness and tension along the whole course of the principal absorbents. Next morning (the tenth day after confinement) I found there was great enlargement of the thigh, leg, and foot of the affected side. The pain was now less circumscribed, the whole extremity having become exquisitely tender. The skin appeared to be stretched to its utmost limits, was extremely smooth and glossy, its colour resembling that of milk—white, with a slight tinge of blue. The sensibility of the affected parts was so great that the mere impression of a fly alighting upon them was insupportable. The uterine discharge, which had been fetid from the first three or four days subsequent to confinement, had now become very offensive; the secretion of milk was nearly suspended; the pulse was frequent, hard and vibratory; alternate rigors and flushes of heat, with great thirst and restlessness, were experienced; the urine was scanty and high coloured; the bowels constipated; the tongue was slightly coated, and of a whitish colour.

The treatment was commenced by bleeding from the arm, until a decided impression was made upon the general circulation; the bowels were then freely opened by castor oil administered during the day, and the limb was enveloped in flannel, wrung out of warm vinegar. To procure rest, a grain and a half of opium were given at night. Her diet was restricted to simple barley water and thin oat meal gruel. The use of the castor oil, the opiate at night, together with the fomentations to the limb, were continued perseveringly for five days, but without the least apparent advantage. The fever, pain and swelling were undiminished. The patient requested a change, and I was very willing to gratify her. The limb was therefore directed to be covered with linen cloths wetted with a weak solution of the acetate of lead; but to prevent too great a shock from so sudden and great a change, the lead water was ap-

plied tepid; it however very soon became cold in consequence of the evaporation that took place. At night she took fifteen grains of the Dover's powder—diet as at first directed.

On the following morning I found the patient more comfortable than she had yet been. She had slept some, was less feverish, and thought her leg not so painful. I perceived at this examination that the limb had lost the bluish tinge noticed at an earlier period, and was more white, or rather, perhaps, it approached to the yellow hue—same treatment continued.

On the next day (the 8th from the commencement of the disease) I found her much as yesterday. Her bowels not having been opened for forty-eight hours, she was directed to take an infusion of senna.

9th day, morning. The senna had operated rather severely, and my patient was more feverish, and hardly so well in any respect. The lead water was continued, with the Dover's powder at night.

Next morning (*10th day*). She was decidedly better every way; fever less; the swelling of the limb appeared to be subsiding: and the patient's spirits were quite excited. Although her bowels had not been opened for thirty six hours, nothing was given for fear of disturbing her present comfort.

11th day. Patient much the same as yesterday—lead water still continued; calcined magnesia ordered for the bowels; and the Dover's powder at night, if necessary to procure sleep.

12th day. Magnesia operated kindly, and the swelling in the leg considerably decreased; but the patient now complained of pain shooting down into the ham and leg of the opposite side. Fearing that the lead water might be repelling the disease too rapidly from the right limb, it was laid aside, and the leg and thigh wrapped in dry flannel.

13th day. Left leg and thigh considerably swelled, and exhibiting the characteristics of the right, but in a much less degree. The lead water was applied to this, as to the first, tepid, but permitted to evaporate constantly; so that it soon became perfectly cold. A purge of magnesia was also ordered.

14th day. Both limbs appear nearly equal in size; but with this great difference. The right thigh and leg are but very little painful; the left exquisitely so: the right pits, on pressure being made with the finger, and the whole surface is far less glossy than some

days ago; the left limb is tense, too painful to bear indenting with the finger, and is very smooth and glossy.

20th day. The treatment has been continued as before; magnesia occasionally to open the bowels, lead water to the left limb, dry flannel to the right one, an opiate at bed time, with a diet consisting of crackers and tea, thin gruel, or mush and molasses. The right limb is but little altered since last report; it is less painful, but much swelled, œdematous, and almost powerless. The left limb is still tender, and occasionally painful, but not quite so glossy. The treatment directed to be continued, with the addition of bathing the right limb with warm rye whiskey three times a day.

25th day. The swelling has abated considerably in the left limb, and the pain is quite gone; it is however still weak, and somewhat œdematous. It is now smaller than the right, which latter continues much enlarged, very feeble and œdematous. The lead water to be discontinued, both limbs to be rubbed with volatile liniment, and wrapped in flannel. Diet to consist of light soups, oysters, tea and toast, chocolate, &c.

From this date, the general course of treatment consisted in endeavours to restore tone to the limbs and strength and vigour to the general system. The patient was therefore as early as possible taken out daily in a carriage; she was at the same time allowed a diet consisting of the most nourishing and digestible articles, together with the moderate use of madeira and port wines. Her limbs were bathed in warm rye whiskey, to which camphor was sometimes added, and after the lapse of a few weeks, they were pretty actively stimulated by frictions with the flesh brush, powdered mustard, &c.

By this plan her health was gradually restored. In two months from the commencement of the attack, she was able to walk the room unassisted; but it was for several months longer before all the swelling and unnatural weakness disappeared from the right leg.

Remarks.—The patient's breasts were regularly drawn by the child during the whole period of her illness, although the quantity of milk was small, even after her health began to improve: the lochial discharge subsided on the ninth day, but remained fetid to the last.

This woman was delivered of a second child, by another practitioner, about five years after, and had, as I have learned, a very painful and tedious time, but no return of the swelling in either leg.

Case 2.

On the 20th of the seventh month (July) 1818, M—— E——, the wife of a country storekeeper, was delivered by a midwife of a living child. She was about thirty years of age, and it being her first confinement, her labour, I understood, was tedious, but not unusually severe.

She was of a delicate and relaxed habit, apparently labouring under functional, and perhaps organic derangement of the liver. She had, previously to her marriage, lived by her needle, and her constitution had evidently suffered from her sedentary course of life. On the 20th day from her confinement, I visited her for the first time, in consequence of her great indisposition. It was stated to me that she had laboured under more or less fever from the time of her delivery; that the lochial discharge had been very scanty and highly offensive, and that for the last five or six days it had entirely disappeared. The secretion of the breasts, which had been sparing from the first, was also nearly suppressed. Her right thigh and leg, with the labium pudendi of the same side, were at the time greatly swelled. The swelling had commenced one week previous to my visit, and from that time the patient had scarcely ever slept. The pulse was small, frequent and hard; her skin hot and dry; the tongue slightly tremulous, not very dry, moderately furred, the margins white, the centre inclining to brown. Bowels loose, and the discharges watery; urine scanty, light coloured and depositing very little sediment. The affected limb was about one third larger than its ordinary size, of a deadly pale colour, smooth and glossy, and painful beyond description. So acutely sensible was the part, that she could not bear the slightest motion; and she seemed in agony all the time that I looked at it, lest any one should touch it. I was very anxious to pass my hand over its surface, and particularly along the course of the absorbents and great vessels, that I might discover if possible their condition. But it was in vain; she seized my hand if I but pointed a finger toward her.

There was also a good deal of tenderness all over the lower part of the abdomen, with the feeling of soreness within the pelvis.

The right iliac region was particularly painful, especially when pressed upon. I was unable to ascertain accurately the condition of the inguinal glands; but from her own account, and from her to-

tal unwillingness to let me examine the part with my fingers, I had no doubt of their being very much affected.

Her nursing had been of the worst kind. While she could eat, she was indulged with whatever inclination pointed out, or accident threw in her way. Nor had she escaped being well drenched with hot teas and hot toddy, in order to promote lactation and the uterine discharge.

The treatment of this case was commenced by abstracting eight ounces of blood from the arm, the application of a blister to the groin, and of flannels wrung out of a strong decoction of hops, over the abdomen and the affected limb, often renewed. At the same time calomel and the Dover's powder were given internally, in the proportion of half a grain of the calomel to four of the powder, repeated every two hours. The next day I was pleased to find that she had perspired freely, had slept several hours, that her bowels were composed, and her feelings far more tolerable. The calomel was now omitted, and the Dover's powder given alone in doses of five grains every six hours. This course was continued until the tenth day of my attendance, using the warm fomentations occasionally, and opening the bowels every other day with either castor oil or calcined magnesia; her diet being all the while of the most simple kind. At this period (tenth day of my attendance) her fever seemed quite subdued; the acute feelings both in the abdomen and the limb were greatly relieved, and the integuments of the latter were much relaxed; her breasts recommenced secreting milk, and her appetite was returning. Flattered by these appearances, I believed that a few days more would restore my patient to her feet; and to accelerate this happy result, the limb was directed to be bathed twice a day in warm rye whiskey, and then wrapped in dry flannel. This delusion however lasted but two days. She was then attacked with a severe pain in the calf of the opposite leg, extending thence to the groin. In a few hours more the limb began to swell, and all the symptoms under which she had previously laboured returned; but in a less violent degree. She did not, it is true, complain of pain in the iliac region of the now affected side, nor of much in the groin; but there was evident swelling of the limb, and this swelling was without redness, and the whole member was acutely sensible; the febrile symptoms also were manifestly aggravated.

The pulse not seeming to admit of much direct depletion, bleeding, in this attack, was omitted; and the treatment was commenced

with a purge of the sulphate of magnesia and fomentations of hops to the affected limb. Three days passed in this way without any visible alteration, when she became impatient, and I determined to change the treatment. The whole inflamed limb was now enveloped in linen cloths wet with lead water. The coldness of the application gave a momentary shock, which alarmed the patient, and admonished me to avoid its repetition; therefore the lead water was directed to be applied tepid, or almost warm, so that the only cold experienced should be the result of evaporation, which was however checked in some measure by additional dressings to ward off the air. In this manner the evils to be apprehended from a too sudden reduction of temperature were avoided.

The application produced all the beneficial effects that were desired. Immediate comfort and relief were the happy consequence of this course; and with no other treatment than the lead water applications, made colder as the feelings of the patient would permit, rest, low diet, and one or two purges of the Epsom salt, all the acute feelings in the last affected limb were removed in less than a week, and the patient was able to bear some weight on it upon the floor.

Case 3.

E—— F———, aged thirty-five years, was delivered on the —— day of the twelfth month (December) 1824, of a living but sickly child, after a moderate labour of three hours continuance. Her labour differed but little from what she had experienced in two former confinements. Her health had not been quite so good for some weeks previous to the last accouchement as ordinary, although it was by no means bad. She had more fever, less appetite, and greater restlessness at night than she had been accustomed to feel at such times, all of which were supposed to have been produced by an unusual degree of exercise in the management of her family affairs. To relieve these symptoms, she was twice bled during the month preceding confinement.

For the first week, that followed her delivery, nothing unusual was observed, excepting the continuance of the slight febrile symptoms by which she had been previously harassed, and an unusually offensive discharge per vaginam, resembling thick, muddy water, and of a greenish colour. To remove this condition of things, her diet was kept very low, her bowels were well opened by magnesia,

and the vagina was frequently washed out by injections of milk and water.

On the tenth day (subsequent to parturition), her uterine discharge had entirely ceased, but she still had a little fever, and complained of a good deal of uneasiness about the pelvis, and in the left flank. Apprehending that these feelings might be owing to a too early subsidence of the lochial discharge, warm fomentations were directed to be made to the abdomen and vulva, and copious draughts of warm water and molasses to be taken internally. This plan, however, produced no perceptible benefit, as she had a chill in the course of the night, followed by an aggravation of the previous symptoms. At my visit in the morning, her pulse being rather active, I bled her moderately from the arm, and directed half an ounce of the sulphate of magnesia; to be repeated, if necessary, in the afternoon.

In the evening I saw her again, and learned that the medicine had operated well. Still, however, the feeling of soreness about the pelvis was unpleasant, and she now began to complain also of shooting pains in the left groin, with a feeling of numbness down the thigh. The fomentations were directed to be repeated (their application having been omitted for some hours), the patient to be nourished altogether upon thin gruel and barley-water, and her bowels opened in the afternoon by a mild injection.

Notwithstanding these means, I had the mortification to find, at my visit on the following morning, that all her bad symptoms were increasing. The discharge from the uterus had not returned in the least; and her breasts, the secretion of which had all along been very scanty, had now ceased to perform their office. The pain in the groin, instead of being transient as the day before, had become permanent; there was likewise severe pain in the ham and about the insertion of the popliteus muscle. The thigh was also perceptibly swelled and very tender to the touch; and there was constant fever, with but a slight remission towards morning.

There remained no longer any doubt as to the character of the complaint. The fever, the pelvic irritation, the pain in the groin, the swelling and extreme tenderness of the upper part of the thigh, without any discoloration, induced me at once to consider it a case of "*phlegmasia dolens.*" Influenced by what I had seen in the two former cases, and having at the time of treating the last case consulted several authors on the subject, and compared their remarks

with my own observations, I was prepared to adopt a more prompt and systematic treatment than in the preceding instances.

Having adopted the position, which I have endeavoured in my former paper to support, that the disease consisted in *an engorgement* of the lymphatic vessels, with inflammation and obstruction in their glands, no time was lost in endeavouring to relieve the inguinal glands by the application of leeches, aided by the operation on the bowels of a dose of the sulphate of magnesia. These means produced very promptly a mitigation of the pain; yet in the evening (eight hours after) it was but little less severe; and the whole limb was considerably swelled, even to the foot; it was hot, elastic, and very tender, although as white as any other part. The whole limb was directed to be covered with strips of linen dipped in tepid lead-water, to be repeated as often as they became dry. The patient was ordered at the same time to be kept perfectly still, to live on a very low diet, and to have her bowels opened daily by enemata. To procure rest at night, she took at bed time fifteen grains of Dover's powder.

This plan was continued perseveringly for one week, at the expiration of which time nearly all pain had left her; the extreme tenderness was entirely relieved; and instead of that tense and elastic condition, which was observable at the early stage, the parts had become relaxed and would pit a little upon pressure being made with the finger; but these digital impressions left behind them an unpleasant soreness, and a perceptible redness of the spots at which they had been made. The lead water was continued, and a scruple of the supertartrate of potass, with half a scruple of powdered jalap, substituted, as a daily purge, for the injections. By this treatment, every vestige of the disease was relieved in one week more, excepting a weakness and feeling of numbness in the limb, which gradually passed off with the assistance of dry frictions, moderate exercise and nourishing diet. This patient has been confined twice since that period, without having experienced any return of the disease, or any inconvenience from the former attack.

Case 4.

E—— E——— was delivered, on the 10th of 3d month (March) 1826, of a dead child, after a moderate labour of three hours continuance. Her health previously had, generally speaking, been good, and no particular reason could be assigned for the death of the

child, except her having carried a number of heavy loads from market, during the advanced period of her pregnancy, whereby she was greatly fatigued at those times, and to which she attributed her misfortune. The room in which she lay was small and open, and the floor in almost immediate contact with the ground. The condition of the chamber, and the circumstances of the patient, rendered it necessary to warm the place by a common iron stove, in which the cooking for the family was performed. Hence the room was frequently heated far beyond what was proper, and sometimes suffered to pass to the opposite extreme. From these and other like causes she experienced, on the sixth day after parturition, a heavy chill, succeeded by high fever, headach, pains in the limbs, &c.

To relieve these symptoms she was bled from the arm, her bowels were freely opened, and as the lochial discharge had ceased to flow, her feet were bathed in warm water, and warm fomentations were applied to the abdomen and vulva. On the following day she appeared to be much relieved; but on the morning following that she had another chill, complained of soreness within the abdomen and about the pelvis. By the fomentations in the first instance, the lochial discharge was partially restored, although quite offensive; but, directly after the second chill, it ceased altogether. It was therefore re-solicited by the pediluvium, warm applications to the abdomen, vulva and thighs, together with copious draughts of warm cremor tartar whey. At my visit on the following day, I regretted to find that, notwithstanding the means employed, the patient was evidently growing worse. There was great soreness about the passage of the round ligament on the left side of the abdomen, extending to the groin of that side, with soreness and pain in the thigh and leg, particularly when moved. Twenty-five leeches were directed to be applied to the groin, and the bowels to be freely emptied by injections; her diet to consist of thin gruel and barley-water. In the evening of the same day I saw her again, and found to my regret that the leeches had not been applied. The thigh was evidently swelled, and the pain was very acute in the upper and posterior part of the leg, about the insertion of the popliteus muscle. As a substitute for leeches, a blister to the groin was directed, and the limb to be covered with strips of linen wet with tepid lead-water. Her bowels having been well opened, and not having slept much for the last two nights, forty drops of laudanum were allowed to be given at bed time. Next morning the whole limb

was swelled down to the very toes; it was nearly double its ordinary size, pale, smooth and glossy, and exceedingly tender and painful; she had great thirst, hot skin, frequent and rather hard pulse, and much restlessness and anxiety of countenance. The blister had raised well, but she had not slept, nor had the lead-water been applied with any regularity. The secretion of the breasts was very sparing, although they had been regularly drawn.

She was now bled twelve ounces (the blood looked sizy), and directed to take six grains of the nitrate of potass with the third of a grain of tartarized antimony every two hours, and to have the lead-water applied diligently.

Having had an opportunity of examining this case while the swelling was only in progress, I was enabled very distinctly to discover an enlargement of the lymphatic glands in the groin and along the inside of the thigh, before general swelling of the limb had taken place; I was not, however, able to trace the lymphatic vessels themselves by any prominent lines, or other means than the patient's feelings of experiencing the greatest sensation of soreness along the precise course that the principal lymphatic trunks are known to pursue.

That the history of this case may not be extended to the length of the preceding ones, I will briefly state that the treatment which was pursued, after what has been detailed, consisted in purging every other day with jalap and cremor tartar, low diet, lead-water to the limb, and ten or fifteen grains of Dover's powder at night, when necessary to procure rest; it serving the double purpose of inducing sleep, and carrying off the morbid heat of the surface, by gentle diaphoresis.

All her acute feelings disappeared in about two weeks; after which, stimulating embrocations, dry frictions, &c. were used to give tone and energy to the part, and nourishing diet, with bark and port wine, to restore strength to the general system.

In the histories which have been given of the preceding cases, I have endeavoured to present to the reader's attention every circumstance that fell under my notice, calculated to shed light upon the nature of the disease, or the causes of its production. In doing so, I may have rendered myself liable to the charge of tedious and useless detail: brevity, however, is but a bad apology for the want of perspicuity; and it is better, perhaps, to tax the reader's patience with a little prolixity, than to leave him uninformed of small but

frequently important links in the chain of causation. By this course he is enabled to reason for himself upon the facts presented to his view, and to judge how far the phenomena observed are referable to the regular progress of the disease, or chargeable to accidental and complicating circumstances.

Those who have read the papers of which the present is a continuation, or who have made more extensive inquiries into the nature of phlegmasia dolens, must have been struck with the diversity of opinions which have been entertained in relation to its pathology. As a consequence of this diversity of opinions amongst authors, their practical directions are found to be not less various and contradictory.

Believing that the evidence furnished in the preceding pages, supported by the facts which may be drawn from the majority of those who have witnessed the disease, sufficiently establishes the position that it consists in inflammation of the lymphatic glands of the affected limb, with engorgement of the vessels which pass through them, it only remains for me to indicate the practice which shall be consistent with this opinion, and in some degree sanctioned by experience.

Before proceeding to speak of the curative means adapted to phlegmasia dolens, it may be proper to notice the most prominent measures for its prevention. These consist in the careful avoidance of all causes of febrile excitement, preceding or at the time of confinement; and the prompt employment of suitable means to remove that condition whenever it may occur; in the proper management of labour—strictly abstaining from any attempt to call the uterus into violent action before the os uteri and external parts are prepared to yield, whether by encouraging the patient to exertions for that purpose, by the use of ergot, hot drinks, or manual interference.

Newly delivered women should be carefully guarded against cold, dampness, or too great heat: they should not be permitted to go out too early, and their first attempts should be short, during clear and mild weather, and when well protected by suitable clothing, especially in cold climates, or variable seasons; and their breasts, even when it is not designed for them to suckle, should be carefully drawn, to keep up their secretory action, until the system has recovered from the irritability consequent upon the puerperal state.

Treatment.—From the decidedly inflammatory character of phleg-

masia dolens, especially in this country, the necessity of early blood-letting, guided in extent by the constitution of the patient and severity of the symptoms, must be apparent: at the same time moderate purging with the neutral salts, low diet, and the most absolute rest, should be enjoined. While thus employing remedies to act upon the general system, we must not neglect topical means. As early as possible after general bleeding, we should endeavour to relieve the affected lymphatic glands, particularly those of the groin, by the application of leeches over them; and it is probable that advantage would be derived from their more extensive employment.

After swelling, heat and soreness have commenced in the limb, it should be covered with cloths frequently wet with weak lead-water; and to prevent the production of a chill, it will be advisable to have it tepid in the commencement. Warm applications, as flannels soaked in hot vinegar, have been used by many practitioners, and are recommended by no less authorities than Professor James and M. Capuron; but they have not succeeded so well under my notice, nor is the practice consistent with our general treatment of inflammation. Yet it must be confessed that warm, and even hot applications, particularly in the moist state, do sometimes give relief in inflammatory cases of great severity, when cold is productive of mischief; but such facts are exceptions to a general and well founded rule.

In addition to the remedies already mentioned, advantage will be obtained from the use of some mild febrifuge, which shall possess a diaphoretic property; as small doses of the nitrate of potass, with tartarized antimony; or the saline mixture with a few drops of antimonial wine in each dose.

When the case is at all severe, the patient cannot sleep without opium in some form; and when depletory measures have been carried to a proper extent, it is eminently useful. I have seen the most benefit to result from it when combined with ipecacuanha, in the form of Dover's powder. It is then not only anodyne, but actively diaphoretic.

If the course of treatment which has now been sketched is fully employed, the urgent symptoms, as fever, pain, &c. will be found to yield in the course of eight or ten days; but much care will be necessary to continue the antifebrile treatment until the inflammatory stage shall have entirely gone by; otherwise convalescence will be unnecessarily postponed, and the patient's sufferings greatly increased. When the pain and tenderness of the limb have

been so far relieved as to permit some degree of motion, recovery will be greatly accelerated by pretty active purging; and for this purpose, a combination of jalap and the supertartrate of potash will be found admirably adapted. In the early stage of the complaint, there is always a good deal of tenderness and irritability of the pelvic viscera, and active purging at such time would be more likely to increase than to relieve that condition. Such a course would also be productive of immense inconvenience to the patient, by causing motion at a time when the most absolute rest is demanded by the pain and suffering which she experiences on the slightest change of position.

Emetics have been strongly recommended by some writers in the treatment of this complaint; but the objections to purging, at an early period of the disease, apply not less forcibly to this class of remedies. When the first or inflammatory stage has been in great measure subdued, and a stiff and torpid state of the limb remains, emetics, like cathartics, may be highly serviceable in arousing the action of the absorbents and the dormant powers of the system. These will be the more necessary when there is an œdematous condition of the limb. At this stage, advantage will also be derived from substituting mild stimulants for the lead-water. Rye whiskey, soap liniment, camphorated spirits, and frictions with dry flannel or mustard flour, will be found among the most useful of the kind.

In very protracted cases, where there is a chronic enlargement of the limb, it is highly probable, from the well known influence which mercury possesses over glandular and lymphatic diseases, that it would prove a powerful remedy. In fact we are not without testimony on this point, as Dr Hosack has employed it in this disease with very favourable results.

In regard to diet, it is scarcely necessary to speak. The necessity for its accommodation to the different stages of the disease and conditions of the patient's system will be obvious to every one. It has already been said, that during the acute stage of the disease, it must be of the lightest and least stimulating kind; and it is equally manifest that when that period has gone by, it should consist of more nourishing articles. In addition to better diet, during convalescence, the use of mild tonics, as bark and the mineral acids, with the moderate use of port wine, exercise in the open air, &c. will greatly assist in restoring the system to its natural energy and to the healthful performance of its necessary functions.

ARTICLE X.—*On the Administration of Tartarized Antimony, in large doses, in some of the Phlegmasiæ.* By JAMES KITCHEN, JUN. M.D.

During my residence in Paris, a few years ago, in the pursuit of my medical studies, I had frequent occasion to visit the various hospitals for which that city is so preeminently celebrated, and to attend to the excellent clinical remarks of the best teachers of medicine and surgery attached to those institutions. I was more particularly, however, in the habit of paying attention to the clinique of M. LAENNEC, a celebrated professor of that metropolis, and the well known author of the "Auscultation mediate," a method of ascertaining diseases which is too much neglected by physicians in general. In going the rounds of his hospital for the first time, my attention was chiefly attracted by his boldness in the exhibition of remedies, and nice discrimination in the diagnosis of disease, more particularly of affections of the chest, through the instrumentality of his new invention, the stethoscope. His accuracy and ease in the detection of the minutest vestige of disease by this instrument were really astonishing, and were well calculated to impress forcibly on the mind of any one, in the least conversant with medicine, its invaluable aid.

What, however, more particularly rivetted my attention, was his administration of large doses of tartar emetic, in the various phlegmasiæ that fell under his notice, chiefly in pneumonia, and that too in the majority of cases, without the least vomiting or nausea, and with the most marked and unfailing success.

Having heard much of the BROUSSAIS doctrine from various sources, having followed that celebrated professor through his wards and attended his lectures for some time, having thus "many a time and oft" heard from his own lips that almost all diseases are more or less implicated with a gastro-enteritis, having heard of the dreadful consequences attendant, in the majority of cases, upon the ingestion of most of the articles of the materia medica and more especially of such as are aptly termed the heroic remedies,—from these circumstances, I say, as well as from the general timidity and expectant practice of French physicians in general, I must confess that, although an American graduate, I was somewhat startled, and immediately came to the resolution to watch his prac-

tice, its effects upon his patients while living and, in case of death, in the autopsic examination, that I might thus arrive at a just conclusion, and be able to steer with somewhat more certainty between the two conflicting doctrines, or methods of practice, and thus render to each its due share of danger and efficacy.

The result of my views in relation to this method of practice I shall now lay before my medical brethren, with all that deference which I am sure every young practitioner must feel, when for the first time he undertakes to commit an essay to a periodical, where, he well knows, it will be read by many criticising eyes, and that too of practitioners so much older than himself, and so much his superior in all medical attainments. Although in this general view of the case, he may be somewhat abashed, he still feels persuaded, that to some he will be able to present something new, and perhaps induce others who have already heard of the practice to give it a trial, and thus not hastily condemn because it does not exactly suit their view of the case; for it is the result of our practice that we should chiefly look to, and not suffer ourselves to be drawn away by any theory or system how plausible soever it may appear on paper or in debate, provided it does not answer our views at the bed side, the only crucible of all doctrines.

Indulgence must be claimed, from the circumstance of my writing altogether from memory, not having kept any notes of any consequence. M. Laennec held his clinique in a portion of the Hospital of La Charité, a small but excellent edifice, built for the great Corvisart during the revolution. It is to this department that all the diseases of the chest are brought and are under the immediate care of M. L. During my visits, it contained about fifty beds, always occupied, and thus afforded a fine opportunity for the study of that class of affections, under so able and celebrated a master.

In cases of pneumonia or inflammation of the parenchyma of the lungs, (for the best description of this disease consult his work on auscultation mediate,) if the attack was violent, it was customary to bleed to the extent of twenty ounces, and immediately to commence with the administration of tartar emetic, gr. i. in sweetened orange flower water ʒ ii. a iii. every two hours during the day, and to put the patient on strict diet. Thus during the day the patient was to take about six grains of tartar emetic. During the night, except in violent cases, the medicine was suspended and the patient allowed to sleep. He recommenced next day in the same manner, and increased, if ad-

visable, to nine grains, always increasing the vehicle in proportion. Should the first or second dose vomit or purge, it was still continued, and generally speaking, the system would soon tolerate it and the most decided benefit would result. In the course of a day or two, and particularly if the case was violent, an increase of the dose was made, raising it half a grain every two hours and always, as before remarked, increasing the quantity of the vehicle in proportion. Sometimes, though rarely, it was impossible to make it stay on the stomach or sojourn in the bowels, it either coming up by vomiting or producing profuse stools soon after its ingestion. In such cases it was always discontinued and the kermes mineral substituted in its place. M. L. however placed very little confidence in this last; he has given it to the extent of forty grains every two hours, but without any very decided effects. Generally speaking, when the system could not tolerate the tart. emetic, the attack was mild and little danger to be apprehended from it: but on the other hand (and this is certainly a beautiful and gratifying view of the subject) where the case was of tremendous violence threatening to suffocate the patient at every respiration, the remedy acted more like an opiate than an emetic; the patient seeming to become comparatively free from uneasiness and that dreadful anxiety which often accompanies affections of the chest, as soon as it had time to exert its customary action. One case I particularly remember: it was an exceedingly violent attack of peripneumony of the right lung and a portion of the chest; the man was almost in a state of suffocation; he was immediately bled to the extent of ℥ xx. and the tartar emetic administered, as detailed above, in grain doses every two hours. At the next visit the most marked benefit was observable; the medicine had acted slightly on his bowels: in the course of the treatment the remedy was raised to nine and twelve grains per diem; this last, however, was soon discontinued, as it affected his alimentary canal with too frequent purgings. From a note found in a small memorandum book, I find that this man remained under treatment one month, that he took in the whole three hundred and twelve grains of tart. emetic, an average of about ten gr. per diem: that, by the stethoscope, nearly the whole of the right lung had suppurated, the left however was perfectly sane; and this diagnosis I am inclined to believe correct, not only from the duration of the malady, and the immense discharge of matter, even from the moment of his admission till his final restoration, but likewise from the well known accuracy of M. L. in detecting scarcely with-

out a failure, lesions of texture, as proved beyond a doubt, whenever, unfortunately, the cases proved fatal, and autopsic examinations were made, as in the French Hospitals is the case with every such subject. I have mentioned, that the man's bowels were somewhat disordered by the medicine; less so on the reduction of the dose; however, they soon returned to their normal condition; his appetite even became voracious, and he was constantly beseeching the Dr to increase his diet, that he could not exist under the small portion of food that was measured out to him. Under these circumstances he had been raised to the full diet of the house, towards the latter end of the treatment; it was soon however reduced, as his system was too feeble to bear such a portion; there was no nausea, no uneasiness of the bowels, nothing like inflammation nor even irritation, although he had almost lived upon the medicine, and had taken in the whole, as mentioned above, three hundred and twelve grains. It will be supposed by some, perhaps, that this does not speak much in favour of the remedy, as the patient lost by suppuration a large portion of his right lung; it must be remembered, however, that the case was an extremely violent one, occupying the whole extent of one lung and a large portion of the other, and moreover that pus was formed even upon his admission into the house and before any thing was done for him. Numerous other cases came under my notice, treated in the same manner, and with much more happy results; none however being so violent and urgent as the one above, their individual traces are not so strongly engraven on my memory. Moderate cases, or even violent ones, when seen in due time, were always cured without a trace of organic lesion; and even, in some few cases, when the lungs, from some cause or other, were exceedingly prone to run into suppuration, the lesion was generally of small extent, and would never have been suspected either by the patient or practitioner, had not the stethoscope unveiled it to the view of the latter.

Since my return to this city, I have tried it in some few cases—in some with much benefit—in others, where the system was not tolerant, of course I had to abandon it and resort to other remedies. I shall now relate a few cases in which I have made use of the tartar emetic. Mr S. sent for me to see him—he had been unwell three or four days—had been bled ℥ xii. purged and had a blister on his chest. He was labouring under the symptoms of pneumonia with a slight touch of pleurisy. It is unnecessary here to relate these symp-

toms, as it would unnecessarily swell the report. I ordered the following prescription:—

℞.—Tart. Antim. gr. xvi.
Aq. Cinnam. ʒ viii.—M.

a table spoonful to be taken every two hours in about the same quantity of sweetened water. The first table spoonful brought up much green bilious matter: he went on however and took in all about thirty grains with continued relief; for on the third day, the abundant viscous expectoration had nearly ceased; this viscous expectoration, peculiar to pneumonia vera, was very abundant the first two days, but on the third had nearly ceased, a revolution having I suppose taken place: having still some uneasiness inside, a blister was ordered which soon afforded relief and the patient was discharged. This was a mild case, it however shews the efficacy, in some degree, of the tartar emetic.

The next case I shall relate was that of a child aged two years—had been unwell some days before I saw it. I soon discovered violent inflammation of the lungs—there was high fever—pulse hard and strong—tongue white in centre and red round the edges—skin dry—every thing most unfavourable. V. S. ʒ xiv. Calomel. pp. gr. vi. Tart. Antim. gr. ß every two hours, made up as above; blister on breast. Next morning visited the child and found it much worse; the calomel and antimony had been given; the other, in this case and in this particular stage of the case the most essential, had been neglected. I now ordered him to be bled till he fainted, and antimony gr. ß every hour. Next morning I found that he had been bled but only to the extent of about ʒ x. I soon perceived that he was so bad that it was impossible to save him. Antim. gr. ß every half hour. Upon my visit next day I found him dead. In all he had taken twenty-four grains in three days. This case was a very violent one; but had proper attention been paid to what was ordered, I would have almost staked my own existence on a happy result. V. S. should have been practised and that to a large extent; for, in such cases, there is no substitute for it, the antimony being only an adjuvant, but I still think a most valuable one.

The next case was that of Mrs W. I was called to see her April 13th 1826. She had been confined with the influenza some time before for three weeks; she had high fever, pulse hard, tense, pain in head, pain and soreness of left lung, sputa tenacious, viscid, with small specks of pus. V. S. ʒ xv. Epispastic to side, and sweet spirits

of nitre and antimonial wine. 14th, somewhat improved. 15th, worse, return of fever, &c., pulse being too weak to bleed, ordered tart. antim. gr. i. every two hours. 16th, much better, had taken, through mistake, gr. i. every hour, without vomiting, and it had even put a stop to a troublesome purging that she had since the the influenza left her. 17th, had sweated all night, tongue still red at point and a little dry in the centre, pulse natural, sputa abundant, very tenacious, of a greenish tinge, streaked with blood: go on with tart. antim. gr. i. every hour. 18th, supports the medicine very well; somewhat improved; tongue cleaner and redness disappearing; cough easier; feels drowsy. She went on much the same till the 21st, when I raised the antimon. to gr. ii. every hour; she took it four times, and vomited the last, when she returned to the old standard; on the 23d, she passed two lumbricoides, as thick as her little finger, according to her account. She went on improving and towards the latter end of the month felt quite restored. May 1st, Cough slight; little or no expectoration; complains of an oppression at the region of heart; the pulse is only 38 and intermittent; as she has palpitation, there is probably some disease of that organ; she now takes the antimony, gr. i. every two hours. May 2d quite well; suspends all medicines and takes plenty of nourishment. During the treatment I did not perceive any suppurative matter, except the first day. She took on the whole one hundred and forty-six grains of tart. emetic, and with considerable benefit.

The last that I shall relate was that of a coloured man, upwards of sixty years of age; was called to see him November 12th 1827: he had pain in left side; pain in head; eyes red; cough; expectoration of tough peripneumonic mucus streaked with blood, there was nearly a pint in the basin; slight vomiting; tongue white in centre, and red round the edges; considerable fever, pulse rather hard, but not very frequent; breast sounds well, except at the seat of pain; pleuro-peripneumonia of the lower part of the left lung; ordered a blister over it, and a table spoonful every two hours of the following mixture:—

℞.—Tart. Antimon. gr. xvi.
Aq. Cinnam. ℥ viii.
Tinct. Opii, gtt. xi.—M.

to be washed down with a little sweetened water; barley water and flaxseed tea as diet. November 13th, he could not support the medicine; one dose vomited and purged so much that he was afraid to venture on a second; he was improved however in every respect;

skin moist; pain left him; still expectorates a tough mucus mixed with blood; I advised him to attempt a teaspoonful of the above. November 14th, much better, but has not taken a drop more of the mixture; no pain; little cough; blister drew very little. November 15th, improving; cough and expectoration very trifling; discharged him. Here it will be perceived that resolution took place very speedily and that too upon the ingestion of but one grain; it must be confessed however that this one grain acted upon him in a pretty harsh manner. He was an old man; and we occasionally come across systems that cannot support the medicine: the remedy however had the desired effect, which was all that could be demanded.

These four cases shew very evidently, that it may be given in this way, not only with safety, but with much efficacy and success. In the first case, it was undoubtedly of much benefit. The loss of so much of the right lung was owing, most probably, to a vomica, although this is ascertained to be a very rare occurrence. The second case was lost entirely by the negligence of the mother. In the third and fourth, it was of considerable benefit. They all shew that it may be given as described, even from a child of two years old to the age of seventy, without the least danger, but on the contrary with much hope of success.

Another inflammatory affection, in which the success of this method of administering the antimony was most marked and evident, was in articular rheumatism, or that species which attacks the joints, and particularly the larger ones. This is an exceedingly unpleasant affection, coming on with the usual symptoms of rheumatic affections, concentrating its force in the capsular cavities of the articulations, and in a short time producing effusion therein. The patients cry out, whenever you attempt to lay your hand on them to make an examination, or even sometimes when you approach the bed—the bed clothes themselves are often insupportable, so acutely sensible to the lightest pressure have the cavities become, through the inflammatory action that is raging within them.

It is in this affection, I say, that I was witness to the most marked and evident success, from the administration of antimony in large doses—one case, and one will be sufficient to relate here, I well remember. The patient was admitted about an hour before the regular visit, at 10 o'clock in the morning. As soon as M. L. examined him he ordered tart. antim. gr. i. every two hours, to be given in the usual way—even before bed time, and consequently after the inges-

tion of only six grains; according to the report of the house student, he was so much relieved, that he left his bed, and walked up and down the ward several times; the consequence of which was, that, the next morning, he was worse than ever. The antimony was again given, and the same effects followed; in a day or two he was discharged perfectly well. I was never more astonished and better satisfied with the powerful effects of the medicine, and of the certainty of its operation in any disease, than I was, in this instance, of this preparation. The certainty of the cure being performed by the antimony, and that too in so short a space of time, and in a disease, which, to the usual method of treatment, is well known to be very rebellious, drove completely away from my mind all doubts as to its efficacy in this, as in several other diseases, and left no further desideratum as regarded its treatment. Happy, thrice happy indeed, would it be for suffering humanity, and most gratifying would it prove to the practitioner of our art, were there allotted, by the bountiful Giver of all good, antidotes to every disease, as sure in their effects, and as quick and permanent in their cure, as this preparation of antimony is to articular rheumatism. I use this strong language, because the above is not a solitary case, nor is it one successful one among many failures—I have seen many cured in a similar manner, and with equal promptness, and so well convinced was M. L. of its certain power and effect, that he used to call it, in this disease, the medicine par excellence, as leaving nothing further to be desired. The effused fluid is almost always absorbed in one or two days, and sometimes, according to the report of M. L. in six or eight hours—an effect of the medicine which is really extraordinary.

Since my return to this city, I have not come across a single case of the kind. Of rheumatism, attacking other parts, however, I have; and am disposed to think favourably of tartar emetic in several cases in which I have administered it, when it would rest on the stomach. For unfortunately, from the few opportunities I have had in this last description of rheumatism, the system does not appear to tolerate it very well; hence the practitioner is baffled in its use. I have found, that, when it was tolerated, it was of considerable service.

It is likewise recommended in other inflammatory affections, of which, however, I have very little to say, as I was not witness to its use in any other than those I have mentioned.

The other phlegmasiæ, in which it may be used, are iritis, deep seated inflammation of the tunics of the eye, erysipelas, hydrocephalus acutus, &c. In this last, it is said to be superior to the mercurial practice. I must confess, however, that having been taught a different method, that is the mercurial practice, and all my brethren using the same, I have been too timid to attempt an innovation, in a disease of such violence and such fatal tendency. I must, however, at the same time, acknowledge, that in the few cases that have come under my notice, the probability is, that the emetic might have been of equal service with the mercury, and that the very next case that I shall be called to treat, I will endeavour to test its efficacy. There is not the least question in my mind that, if the stomach will bear the dose, it will prove of essential benefit; but, unfortunately, in these cases the stomach is always more or less affected, and hence will arise a difficulty, which possibly may be insurmountable.

According to the opinion of some physiologists that the brain has no absorbents, connected with the views of M. L. as to the modus operandi of the antimony being by absorption, I should have, to be sure, very little hopes of success. Fortunately, however, for this description of cases at least, the former opinion is a mere supposition, admitting of no positive proof, arising only from negative facts, and more than counterbalanced by the general laws of the animal economy, and the particular one of growth and nutrition in that organ, as well as in other parts of the frame.

In addition to what has been related, M. L. was in the habit of administering it in the same way in cases of palsy, particularly when the consequence of apoplexy. I will mention one case. The right arm alone was affected, so that the patient had no power over it whatever—it was materially benefited by the treatment. This man had arrived at the quantity of 3 i. during the day, taking five grains every hour. It was at this time that I left Paris, and consequently heard nothing more of the case. At the commencement of the treatment, it was totally impossible for the man to give his arm the least motion—the last time I saw him, he could lift it half way up to his head and was improving every day. It is presumable, that this amelioration was produced by the medicine, as he had taken nothing else. To say the least of it, it is worthy a trial in these cases. M. L. used to relate that, in some instances, he had performed perfect cures—in others he had failed: but cannot every physician say the

same of every article of the materia medica, however much it may have been boasted of.

Remarks.—It will readily be perceived by many of my readers, that the above is no new practice—it has prevailed in Italy since the commencement of the present century, still holds its sway, and is every day gaining new partizans. It is in fact essentially the counter-stimulant method of curing diseases, emanating from the Italian doctrine taught at present by the celebrated TOMASSINI of Bologna, BORDA of Pavia, BRERA of Padua and others, equally well known to the medical world as professors of first rate abilities and practical physicians of acknowledged skill and acute discernment.

The first impulse was given to it by the no less celebrated RASORI, during an epidemic which prevailed at Genoa during the years 1799 and 1800, in which he saw the sad effects resulting from the Brunonian doctrine, which at that time occupied the attention and directed the practice of almost all the medical men of that country. Italy was the theatre upon which BROWN was received with the greatest eclat. His doctrine was well received by the schools of that country, and distributed over its whole surface by the students, who implicitly received, as sacred, what emanated from the mouths of their preceptors. It soon, however, felt a fatal shock—its almost universal prevalence led to more minute examination, and thus by its diffusion its weakness was discovered, and the Italian system was erected triumphantly on its ruins.

This event took place, as mentioned above, about the beginning of the present century. This doctrine, like that of Brown, divides diseases into sthenic and asthenic, or diseases of high and low action: unlike it, however, it considers the former as by far the most numerous class, due to an increase of excitability, or to an excess of stimulus, requiring, in consequence, a certain class of articles, which it calls counter-stimulants, or such as possess a particular debilitating property, acting upon the excitability in a manner opposite to that of stimulation.

The counter-stimulant articles of the materia medica are, after this theory, endowed with a property of lowering the excitement, not however like venesection and purging by the subtraction of stimulus, but by depressing the excitability of the fibre by a sort of specific property. Among these articles, it will be only necessary

here to mention the tartarized antimony: that preparation which I have endeavoured to press on your notice in the foregoing pages.

From this sketch, it will appear, that the phlegmasiæ, being considered as diseases of excitement, or technically called sthenic, require for their eradication the counter-stimulants which act by depressing the fibre and lowering the excitement when in that state; and the more the case is one of stimulus, so much the more tolerance has the system for the counter-stimulant article.

The word tolerance, which I have made use of several times, is derived from the Italian *tolleranza*, which is consecrated, in the language of the Italian doctrine, to express the faculty, which the system possesses, of supporting a larger or a smaller dose of medicine, proportioned to the degree of the disease. Thus, for example, in a case of acute pneumonia, if the patient supports a large dose of antimony without vomiting, he is said to tolerate that dose.

From this imperfect sketch, it will readily be perceived, why the antimony is used in phlegmasiæ, and of the modus operandi of the medicine, according to the Italian theory. The diseases I have mentioned are sthenic; the indication is to use counter-stimulants. Many of these are supposed to have an elective action on different organs, and the antimony particularly on the lungs, hence its utility in pneumonia. What that peculiar action may be, regard being had to the proper dose, it may perhaps be difficult precisely to say—that it has an action on those organs there is no doubt, for in cases of poisoning from that article, the lungs are always in a state of inflammatory action, as proved by Orfila in his experiments—in this case and in proper doses, suffice it for us that it is beneficial, without knowing whether it be owing to its counter-stimulant property or not—this is the solution of the question by Rasori, Tomassini and others. M. Laennec, however, although, in these instances, he follows the practice of these celebrated men, does not adopt their theory. His opinion is, that it exerts its beneficial influence, by producing an extremely active absorption, which causes, in a very short space of time, in many instances, a complete resolution of the inflammation; for in many cases of articular rheumatism, where there is considerable effusion within the capsular cavities, the antimony produces an absorption in a day or two, and even according to the observation of M. L. in some instances, in six or eight hours.

Another explanation of its modus operandi is given by the par-

tizans of the French doctrine, viz. that it acts by producing a revulsion on the stomach and intestines, and thus, by irritating the mucous surface of the canal, elicits the inflammatory action from the lungs to locate itself on those organs. According to this summary way of loosening the knot, we have their favourite gastro-enteritis produced, which has the power, peculiar in this instance, of doing away a similar affection in the lungs, whereas, in all other inflammations, its addition becomes an aggravating cause. By what we hear and read of this doctrine, however, we should be a little puzzled to say which is the most dangerous affection, a gastro-enteritis or a pneumonia, and yet in this case it appears to become very trifling. Is this however a true and correct statement of the case? Let us inquire, what evidence they have, to ground them in such an assertion—and this we shall do in very few words. In the great majority of cases, is there vomiting or purging? No. Is there any uneasiness or irritation of that chain of organs? Not the least. Is there any inflammation detected, when, unfortunately, in the course of such treatment, a patient dies? Not a vestige—since according to M. L.'s testimony, grounded on much experience and very extensive pathological observation, derived from autopsic examinations in a large hospital, as also from the testimony of others equally celebrated, particularly in Italy, where, from the first dawnings of our science, dissections have been faithfully made, and pathological anatomy particularly attended to; from the testimony of such men, I say, we learn, that in the vast majority of instances, the mucous surface of that canal is, upon examination, in a perfectly healthy condition, and so far from being in a state of what could, upon the most extensive latitude of the term, be called inflammation or even simple irritation of the French school, it is very often whiter than usual. The most sensible apparent effects of the remedy, are, in some cases, an increase of perspiration and of urine, and in all, a diminution of febrile action, (which would not surely be the case, if it produced a gastro-enteritis, the great and extensive generator of fever) and a prompt loss of flesh and strength. It acts, likewise, it is said, when administered in baths. If it does act by revulsion, it ought to do so in every case, which is very far from being the fact.

It is used in Italy by the majority of the practitioners of that country—they laud its effects. In Paris it has been, and is at present, administered by Messrs. Kæssler, Laennec, Recamier, Iadelot, Guersent, and others—the opinions of M. L. I have al-

ready stated. M. Guersent, who has the charge of a large hospital of children, has lately, in the Archives Generales, published an article on cases of pneumonia in those interesting little patients—he seems pleased with its effects. M. Peschier, of Geneva, has given it in pretty considerable doses, and with the most happy and decided effects—he has administered from six to thirty grains in the twenty-four hours, in acute pneumonic affections, and has always found that the larger the dose, the better was the system able to support it, and that small doses almost always distressed the stomach and bowels very much.

Dr Batchelder, of the New England states, has also given it in pneumonia—he appears however to have used it particularly with regard to its emetic properties, and sometimes substitutes it for venesection.

Dr M'Call, of Nashville, also used it under similar views, in the bilious pneumonies of the south,—he, however, used purgatives along with it, thus evacuating the stomach and bowels and acting on an entirely different principle.

Dr Cartwright, of Natchez, in a paper inserted in the Medical Recorder, No. 35, speaks very highly of it, in bilious pneumonia. He gave it in very considerable doses, and those too in the form of pills, or in a very small quantity of liquid. He remarks, that most of the patients will not bear more than five nor less than three grains at a dose without vomiting—in some cases, however, ten grains may be given. Dr C. conceives, that it operates by giving energy to the nervous system, and thus developing excitement, doing away the internal congestion, and producing equilibrium throughout the system. Dr M'Pheeters, of the same place, coincides with Dr C. in his views of the medicine, and in the last number of the Recorder is a note from a medical correspondent, in Gennessee, New York, stating his success with it, used according to Dr C.'s views.

From these statements, then, does it not behove the American practitioners of medicine to pay more attention to the free administration of this remedy in some of the phlegmasiæ; as, in this country, they are acknowledged, on all hands, to be of extreme violence, requiring much more active and energetic treatment than the same diseases in other parts of the world. Let us endeavour to elicit some new light, on this side of the water, that we may see our way, in the treatment of this class of diseases, as distinctly and clearly as possible, and thus discover the shortest path to arrive

at a favourable termination; for only examine the records of death and see how many melancholy cases there are of extinction of life by the phlegmasiæ.

The antimony had formerly been much used, in doses to vomit, in pneumonia, with success.—Riverius, who flourished in the beginning of the 17th century, the school of Montpellier, Stahl and many others, employed it in this way. Devaugeau, a former physician of La Charité, never resorted to bleeding but always to the emetic, and had as much success as Corvisart, who used bleeding almost to the exclusion of every other remedy. I would here mention, that I would not have my reader suppose, from what I have penned on the subject, that I would recommend this remedy to the abandonment of others, which may be used at the same time, without interfering with it. Although it is the opinion of Rasori and Laennec, that it has sufficient powe" by itself to eradicate the diseased action in this class of affections, I merely wish to hold it forth, to the profession of this country, as an adjuvant, but that, I must confess, a very powerful one. Where there is high fever, or where the pulse indicates V. S., recourse, unquestionably, should be had to it, and even to topical depletion, and other measures, which, at the time, may be considered serviceable. Bleeding was the first thing that was resorted to in pneumonia. Even repeated bleedings are often of considerable service. It has been said by some, that, after three or four days from the attack, it is of very little effect—others have advised us to bleed till expectoration becomes abundant. With old men and feeble subjects, it is necessary to be circumspect in this mode of relief, and here the antimony is often of essential service. When the heart beats strong, and particularly in the young and robust, it should never be omitted. It is only, however, during the first 24 or 48 hours, according to Mr L. that it is of much service, for often, at the termination of these periods, pus is already formed. T'is certainly a precious resource in the first periods, and then it should be made largely. It is less useful or rather more doubtful in the pneumonia of old people, particularly when following catarrh in adynamic fevers, or when connected with a bilious affection—in these cases, we should be cautious in the employment of the lancet. Here then, in all such instances, where we are not fully justified by the state of the system, the symptoms of the attack, and former experience to abstract blood, recourse should be had to the antimony,

and here I am very much mistaken, should it not prove a valuable article.

I would not have my readers suppose, from what I have said, that I wish to uphold the Italian doctrine: except in this particular instance of the use of antimony, I know nothing of it, and have here only taken the liberty to speak in its favour, merely as regards the effects produced by this remedy, leaving to others, more skilled in reasoning, to explain the manner in which it acts. Of the administration of the same preparation in gastro-enteritis, of gamboge in enteritis, dysentery, &c. of cantharides in inflammations of the kidneys, &c. I know nothing. I would not condemn, however, without sufficient proof, what others have tried and found serviceable. I must confess, however, that, from what I have been taught and from what little I have seen of medicine, it would not be a very successful practice, and yet it is supported by very high authority. These cases, however, differ materially, with regard to the practice pursued, from those which I have related. Do not physicians, in every part of the world, treat diseases with remedies which, to our ideas of disease, and to strict medical reasoning, appear to be very far from the correct one and yet with manifest success.

Who would, *à priori*, have applied spirits of turpentine to a burn, to ophthalmia, or have used it in hæmatemesis? Who would have thought of curing conjunctivitis by a solution of lunar caustic and other stimulating articles? Who would have used capsicum in yellow fever or cynanche tonsillaris? Or who, from mere reasoning on the articles of the materia medica, would ever have thought of giving, as just mentioned, antimony in gastritis or gamboge in dysentery, and yet we hear every day of its being done and it is said with success too. I would not, nevertheless, pretend in its full extent to follow such practice, because, according to my views of disease and the administration of remedies, it would be, in many cases, a very incendiary one. I have only mentioned it, to shew how physicians differ in their views and practice, and yet it may be a question, whether, in the long run, one has more success than another. All these cases, however, and the application of such remedies to them, differ essentially from the administration of the antimony, in cases of phlegmasiæ situated at a distance from that canal, which is in a perfectly healthy condition, and not in the least irritated by the medicine. It tends to shew how uncertain and varied our practice is: while one cures an ophthalmia by copious bleeding and depletion,

another will arrive at the same end by using the caustic; and while a third treats a burn with soothing, cooling applications, a fourth will pour on it the irritating spirits of turpentine. This being the case, should we not be careful how we condemn modes of practice which do not altogether chime in with our theory, or which clash with our opinions and experience of disease? Should we not, under such circumstances, pay some deference to the practice of others, particularly when we have not tested it at the bed side, the only crucible, as before observed, of all medical theories and doctrines?—It is at that spot, in the frequent attendance in the sick chamber, that, when well grounded in physiological and pathological anatomy and with a good knowledge of pharmaceutic chemistry and the materia medica, we can derive our most valuable knowledge and information, as regards the treatment of the "various ills that flesh is heir to." It is by such attentive observation, that facts, "stubborn things," are collected. It is in fine there alone that we can possibly arrive at any thing like certainty in medicine, and bring about that desirable period, so fervently anticipated and so religiously believed by our celebrated RUSH, —the period when all diseases will have a sure and certain method of treatment, and every affection its specific remedy.

ARTICLE XI.—*Case of Irritability of the Stomach.* By JOHN HOPKINSON, M.D.

The attention of the medical world has of late been turned with so much intensity to all affections of the mucous membranes, that any fact bearing upon their pathology acquires a high degree of interest. And hence the stomach, in the ratio of its importance in the healthy operations of the animal economy, claims our regard in all its various conditions of derangement. As the practical deductions which might be drawn from the following case may prove beneficial in the general cause, the particulars of it have been collected with accuracy, and are submitted with that single recommendation.

M. N. came under my care on the 10th day of January last, in consequence of an inability to retain any food whatever in the stomach; she had however persevered, for some days previous to my

first visit, to take her regular meals, although they were almost invariably rejected shortly after their reception into the stomach. Nothing peculiar could be discovered in the skin, pulse or tongue, except that the latter was slightly furred; and indeed the only striking symptom observed was in the countenance, which had a languid, sickly expression. From all the symptoms, I concluded, that this was an instance of what has been termed erethism of the stomach, as there was no decided evidence of inflammation, and every proof of excessive irritation. It naturally struck me, that, under such circumstances, very little was to be anticipated from any medicinal agents internally exhibited, and, that abstinence, alike from them and from food, would form the most successful plan for relieving my patient. Upon inquiry, I found that various means had been resorted to, as usual on such occasions, to quiet the stomach, and of course, in this instance, without effect: such as camphor, peppermint, spirits, &c. irritants which only augmented what they were intended to relieve. The pulse was not above eighty in the minute, and although somewhat corded, yet very feeble and indistinct. As there seemed no immediate necessity for the detraction of blood, I ordered, perhaps merely from habit, a little lime water, to be taken occasionally with or without milk, and left her under the strict injunction, that no article of food whatever should be allowed. At my next visit on the 12th, I found the lime water had been no more successful than the previous articles which had been tried, as it invariably produced the same train of symptoms. Under these circumstances I interdicted every drink, except a very little cool water which was to be taken cautiously, and ordered a large blister to the epigastrium, at the same time enjoining perfect rest in bed. Much astonishment will here arise perhaps, with the Broussaian advocates, that leeches were not immediately put upon the epigastrium: but they are an expensive remedy, and therefore I was obliged in this case, if possible, to succeed without them, nor did I despair of being able to do so; besides, I am not so well persuaded, that my patient would have been benefited by their employment; for if the disease be not very soon arrested, the excessive detraction of blood, by debilitating the system, only diminishes the patient's ability to tolerate the perfect abstinence so essential to the cure. Cases, indeed, are not wanting in which this has actually happened; and persons with this very affection have sunk exhausted, merely from the application of leeches. I refer to the July number of the Lon-

don Medico-Chirurgical Review for this year, for further information. As regards the effects of the blister, I cannot say that my patient was perceptibly benefited by it, although she certainly was not made worse, as might have been anticipated by those whose views have so much changed in relation to their utility in all such cases.

The article of drink she generally took was toast water, which agreed tolerably well with her, certainly better than lemonade or any thing else; it generally excited a little hiccough and pain, and then rested quietly in the stomach. The train of symptoms following the trial of any other liquid, even weak tea, milk or coffee, was somewhat peculiar. For a moment it would produce no unpleasant symptom, but very soon there supervened hiccough, which was always the first indication, accompanied by some pain in the stomach. To these were now added a sense of heat or burning, nausea, and eructation of flatus, which continued for some minutes after its reception, when the offender was cast out, and again all was tranquil. This was invariably the consequence of any attempt to change her drink, and on one occasion, a small crumb, which had been accidentally swallowed in the toast water, induced all the above mentioned phenomena. During the morning or afternoon, at which times my visits were made, the pulse never exceeded eighty—the skin was not hot—the tongue was neither dry nor red, being merely slightly furred, nor in fact was there any indication of fever or inflammation; she was cheerful, occasionally sat up, and seemed to be well: she undoubtedly at this time looked much better than when I saw her first, a week previous, and that perhaps was all that could be said. She complained, however, of being very much troubled with thirst during the night, from which she concluded that she must then have fever. With a view of relieving this, I ordered a quarter of a grain of calomel, with a little gum arabic, three or four times through the day, which she took without being told of it—for the idea of medicine was so disagreeable, that she could not have retained it, had she been conscious of taking any thing under the title of *physic*. With this she occasionally took the black drop, which seemed to have a tranquillizing effect; and at night when restless, it was also allowed, composing her and producing sleep, and she was generally indulged with the privilege. In this way things had gone on for ten days; the blister had healed, and with the single exception of an alleviation of thirst (effected probably by the calomel, which

was now discontinued), no progress had been made towards a recovery. She often complained of a most disagreeable taste in the mouth, which was by far the most uncomfortable symptom she had; I cannot say whether this was the result of the calomel or not, although it is very probable. Not much concerned respecting the regularity of the bowels, I had determined, from the commencement, to leave that matter entirely to nature: but upon some anxiety having been expressed upon this point, and no passage having been obtained since her indisposition, injections were allowed, to be used every other day; these produced only a slight discharge of a white mucus, totally untinged with bile. It was suggested to me, that this was a case of softening of the mucous coat, and that some astringent would prove beneficial in restoring its tone: this was attempted with kino, in the form of pills, but it was impossible to prevail upon her to take them. Not satisfied with this dilatory practice, I determined, even at this late stage of the complaint, to have her cupped. This was done near the third week of my attendance, and although not followed by any decided change, she was thought upon the whole to be better; that is to say, the toast water was sometimes taken without producing hiccough. The pulse at this time was scarcely perceptible, and she complained of great debility. She was requested now to try the white of an egg beaten up with sugar, which proved most grateful, and agreed with her very well. I would recommend this as an article of diet in all similar cases, as exceedingly light, and probably very nourishing. From this time forward she improved, occasionally sucking the juice of an orange, and sometimes taking light food, such as mush, arrow root, &c. Her appetite now returned with a particular desire for salt meat, which it was very difficult to restrain, even with the allowance of a small piece of ham to hold in the mouth. Within a few days, four weeks from the first day of my attendance, the bowels resumed their office, and were natural in every respect. The menstrual discharge was perfectly regular, and occurred during my attendance, without however influencing in the least the march of the disease. Things continued in this favourable condition for one week, when on the eleventh of February I was again sent for, on account of a return of the vomiting and other symptoms. It came on after taking a cup of tea, but she affirmed that it arose entirely from witnessing her brother, who was taking a solution of tartar emetic, for an inflammation of his eyes. On this occasion her tongue was more furred than

I had before seen it, and at the back part was brown, although moist. She was requested to try some weak quassia tea, by way of a tonic to her stomach, which I was happy to find now agreed well with her, not causing any unpleasant symptom. From this time she gradually convalesced.

This case, not in itself either novel or remarkable, possesses still some points which are worthy of consideration. In opposition to M. Broussais's problem, I have elsewhere attempted to elucidate the great practical distinction to be drawn between irritation, or simple nervous excitement, and inflammation, or increase of vascular action. In applying cups, it is not to be inferred that inflammation was suspected. I had so often seen these symptoms relieved by them that they were now prescribed, more from a prejudice in their favour, than any decided reason why they should prove beneficial. It may be said indeed, that my patient improved from that time; but, as this improvement was very gradual and not immediate, it still remains doubtful how it had been brought about. In making this remark, it is not to be supposed, however, that any desire exists to detract from the value of cupping as a remedial agent. In fine, purgatives, tonics, and all irritants were as inappropriate to the onset of this case, as would have been leeching, or bleeding in any way, to much extent. Dry cupping might probably have answered every purpose had it been tried. If there existed no inflammation, why treat it on that supposition? And if it did actually exist and produce those symptoms, why had we not also high fever, pains in the back and head, &c. irritated pulse, dry or red tongue, &c. &c.? From these considerations I am yet to learn, that such symptoms invariably arise from any grade whatever of gastric or enteritic inflammation, or that loss of blood is essential to their removal.

To advance the cause of the science of medicine is certainly both a duty and a pleasure to every member of the profession; but there is some danger of overstepping the bounds prescribed by facts and actual observation, or entering into the unknown regions of speculation.

ARTICLE XII.—*Cases of Ulceration of the Intestines.* By GEORGE S. BETTNER of North Carolina, one of the Senior Students of the Philadelphia Alms House Infirmary.

Auspicious as may be the present period for the advancement of the medical profession in this country, still it must be acknowledged, that difficulties yet exist. The pathological investigations, now conducting with much spirit and with great benefit to medical science, have been chiefly confined to another quarter, and we have been contented to receive and acknowledge the discoveries and observations of others. That very valuable contributions, however, have been made, by the profession in this country, it would be injustice to deny. But comparatively few and limited are the facilities for autopsical investigations, by which obscurity may be in a great measure removed from the practice of medicine, and the fallacy of incorrect theoretical opinions be detected. The prejudices of society, which are natural and almost invincible in regard to morbid anatomy, have obstructed the progress of pathological discovery in this country, where an ample theatre has been afforded, not only from the variety of diseases but from the same diseases being modified by diversity of situation and climate.

The stomach having been long regarded as the principal organ that is liable to suffer in fever and in a variety of other diseases, it has been but lately that investigations, more ample and extended, have illustrated the importance of attending to the whole alimentary canal. The truth of this proposition has recently been presented in a most interesting light by M. BRETONNEAU, a distinguished physician of Tours. Having observed that the small glands of PEYER and BRUNNER, scattered along the course of the small and large intestines, are often liable to inflammation and ulceration, he has constituted a new disease, entitled dothinenteritis or pustular enteritis; and has insisted much upon its frequency and fatality. The fact of its actual occurrence was shortly afterwards confirmed by the observations of TROILLET, ANDRAL, and others of Paris, and by Dr HEWITT of St George's Hospital, London. Nothing has hitherto been written upon the subject in this country. This may have resulted from causes previously adverted to: but in the Alms House Infirmary of Philadelphia, where the greatest facility is allowed for such investigations, opportunity has been afforded of seeing not

only this but every other form of ulceration to which the intestinal canal is liable.

The existence of ulceration in the intestines is by no means a new discovery. It has been long known to occur in variola, in chronic diarrhea, in dysentery and in the colliquative diarrhea of phthisis. But it is in regard to other diseases and especially fever that it now lays the greatest claim to attention. So sceptical are many, as it respects the existence of ulceration of the intestines, except in the ordinary cases above alluded to, that they have doubted whether they ever occur, or supposed that glasses would be necessary to detect them. It is hardly necessary to state how unfounded and discreditable are such opinions.

In treating this subject it might be thought advantageous to describe the various classes into which ulceration of the intestines might be distributed. These would be numerous, considering whether the glands of PEYER and BRUNNER alone were affected, or whether the ulcers were superficial or deep seated, involving one or more coats, and regarding the various aspects of their surfaces and edges. All portions of the intestines also are not equally liable to ulceration; some are more frequently affected than others, and their susceptibility has been computed in the following order. The cœcum, the end of the ileum, end of the colon, commencement of the rectum, duodenum, jejunum and the arch of the colon. Ulcerations of the rectum, from this gut being liable to fistula, hemorrhoids, cancer, contractions, &c. might form a distinct class. GENDRIN, in his anatomical and pathological history of inflammation, has divided intestinal ulcerations into three classes. 1. The villous, confined to the villi of the mucous coat; 2. The follicular, confined to the mucous follicles; and 3. The patched or laminated, which would embrace in some instances both the first. If to these is added the pustular, or dothinenteritic, they would be sufficiently comprehensive. But it is of less importance to describe the classes of the ulcers, than to point out the cases in which they occur. This must be done however, under this disadvantage, that the limits of this paper would not allow of a very minute detail of the history, symptoms, and treatment of each case.

Case 1.

Eliza Gilmore, age 22 years, an Irish emigrant, admitted into women's medical ward, October 3d 1827, with fever. Had been

sick for nine weeks, and had been treated, upon the active disturbing plan, with cathartics and emetics. Symptoms on admission,—great prostration, feeble pulse, tender epigastrium, excitement of brain. Stimuli were used, blister to head, &c. but delirium increased, and convulsions supervening, she died October 6th.

Autopsis.—Choroid plexus and vessels of brain injected; slight effusion under arachnoid membrane; lungs, liver, and vena portarum congested; heart and spleen natural; stomach had an hour glass contraction; some dark spots about its mucous tunic, the latter softened at the large extremity; jejunum injected externally, internally healthy; whole of the small intestines injected externally, as also that portion of the mesentery attaching the ileum. The lower part of the ileum had dark spots on its peritoneal and muscular coats. Corresponding to these internally were ulcers in the mucous coat; generally of an oblong shape, some very large, the edges hard and elevated, with ragged and excavated centres; the mucous membrane around being intensely injected. There were also some pallid, tuberculous elevations, with ulceration just commencing in the centre, as if at a point. Some of the glands of the mesentery were in a state of suppuration, and all of them diseased.

Case 2.

James Clark, admitted into black men's medical ward Nov. 1st with fever. Previous history and treatment not known. On admission, tongue slightly furred; pulse good; hoarseness; eyes injected; but symptoms generally favourable. Was leeched on the epigastrium; and restricted to light diet.

Nov. 16th. Appeared entirely convalescent. Took cold by imprudent exposure; fever returned; skin dry and hot; tongue red and dry, and became at last dark and encrusted; subsultus tendinum; laborious respiration; deep stupor. He died Nov. 21st, with all the symptoms of typhus fever.

Autopsis, day after death.—The large extremity of the stomach congested; the mucous tunic thinner and softer than natural; at the greater curvature, on the anterior surface, were albuminous flakes, some of which could be removed by scraping; on dissecting off the mucous coat, the under surface exhibited no such appearance. Liver enlarged but of a natural structure. The upper portion of the small intestines natural; on the lower part of the ileum almost throughout were streaks of inflammation, especially on that part of the

mucous membrane next to the mesentery. The inflammation existed principally in streaks, with some spots or dots of effused blood, some but no great vascular injection, and some thickened elliptical laminæ in the lower part of the ileum, covered with black dots which occupied the mucous follicles. In the large intestines the mucous membrane appeared elevated in irregular ridges, the tops of which were rough, fungiform and of a whitish yellow aspect; surrounding these elevations, were black and red patches running in circuitous and oblique directions. There were besides many distinct ulcers; the ulceration diminished in the ascending colon and was absent in the cœcum, where the black and red patches also prevailed, but were less intense. The descending colon and the rectum were the worst. On dissecting the coats, the peritoneal and muscular tunics were not involved in the disease, and in the intervals of the elevations and ulcers alluded to the mucous membrane was healthy in colour and texture.

Remarks.—These two cases exhibit evidently the characters of dothinenteritis, as described by M. Bretonneau and by Dr Hewitt; the ulcerations commencing in the glands; the inflamed areolæ surrounding them; the glands in some instances destroyed; and the ulcerations advancing in the mucous membrane; the intervals being healthy in appearance. The whole of these dissections were recorded while ignorant of the observations of those gentlemen. But it is not the glands only that may prove the seat of ulceration, in cases similar to those described above. In the fatal terminations of fever, ulcers, especially of the small intestines and at the ileo-cœcal valve, have been noticed at the Alms House, when the glands, particularly the mesenteric, have not been at all affected. The affection of these latter glands, indeed, has been explained, by supposing an absorption of the purulent fluid by the radicals of the veins; these veins transporting the fluid to the glands of the mesentery, where they anastomose with each other, and with the absorbent vessels. Be this as it may, it is not consistent with the object of this paper to enter upon investigations of this nature; intending only to record facts which may speak for themselves; and on this account we shall not venture to inquire, whether M. Bretonneau was justified in building upon dothinentery a new theory of fever; or whether Dr Hewitt was more correct in speaking of it as occurring in idiopathic fever, without its being the cause of fever. Its existence

is enough for the practitioner to know, and is sufficient to convince us of the truth of the remark which Dr JACKSON has often made in witnessing examinations at the Alms House, that the local affections in fever are as much to be dreaded as the fever itself. So true is this, that many cases have occurred, where patients, originally affected with fever, have died, not of the fever, but of peritoneal inflammation, induced by ulceration extending through the bowels. In some instances, weeks or perhaps months after the fever has disappeared, patients have died of the ulceration which has been left to corrode the intestines, inducing diarrhea, exhaustion, and death. The same is true also with regard to phthisis pulmonalis, where healthy portions of the lungs have been left, sufficient for the purposes of respiration, but the energies of life have been exhausted by the continued effects of gastro-intestinal irritation and ulceration.

Case 3.

Sarah Warden, admitted into black women's medical ward November 13, aged 22. Habits intemperate. Early in the month had been exposed to cold and wet, which brought on fever, attended with hoarseness. Continued to become worse, and came into the medical ward.

Symptoms on admission,—violent headach, difficulty of breathing, cough, pain around the umbilicus, tenderness over the abdomen and epigastrium, skin dry and hot; bowels very open, pulse small, frequent, and tense. She died on the 16th.

Autopsis.—Liver much enlarged, harder than natural; stomach natural except slight injection at the lower extremity. The mucous coat of the lower half of the ileum, as well as of the ascending and descending colon, exhibited the appearance of having had flour sprinkled on its surface, and in the midst of it in some places were thickenings of the mucous coat, surrounded by vascular injections. In the rectum were the same appearances and patches injected as above. On close examination, the injection was found seated in the muscular coat, as the mucous coat could be removed entire, and in one place, where the membrane was thus removed, ulceration was observed in the muscular coat.

Remarks.—The diarrhea, so conspicuous in this case, is what has often been observed in cases of fever in this house, and has often led

us to suspect the existence of inflammation which may proceed to disorganization; and the knowledge of this fact has convinced us of the utility of resorting early to cooling and mucilaginous injections into the bowels, and to the use of leeches and mild fomentations to the abdomen and epigastrium, and to abstain, as much as possible, from the use of active purgatives, which would defeat the object of this treatment. As to ulceration existing in the muscular coat, it is not probable that it often occurs, and if in any extent, would soon embrace the cellular and mucous membranes. But it is possible for disorganization to commence its career in any of the coats of the intestines.

There died a few weeks ago a man of middle age, in the men's clinical medical ward, whose case it is unnecessary to detail at full length. He was admitted into the Alms House from the Pennsylvania Hospital, where he had been the subject of intermittent fever. The result of this was dropsical effusions; and he died shortly after his admission into this house, having been treated ineffectually with diuretics, &c. On examination, ulceration of the bowels was discovered, accompanied with peritoneal inflammation. The omentum was thickened and indurated, and the intestines glued together by coagulable lymph which thickly covered the peritoneal surface of the intestines; tubercles were observed, many of which were in a state of suppuration. These had, in many instances, extended inwards so far, as to leave the mucous membrane entire, although it exhibited along its track marks of chronic irritation and inflammation. It would be easy, were it essential, to detail other cases, similar to the last mentioned, in which persons attacked at first with fever attended with diarrhea, and resulting at last in effusion, were found after death to have ulcerations of the intestines, seated in the mucous coat, not large, jagged, and irregular like those observed in typhus fever, but generally diminutive, a line or two in diameter, and circumscribed by well defined areolæ of a red colour. The ulcers too, that may so often be observed in chronic diarrhea and dysentery, in the colliquative diarrhea of phthisis, and in the cases which RICHTER has denominated rheumatism inverted upon the bowels, although the edges are often jagged, blackish, and deep, do not present the elevated appearance, like the venereal chancres, observed in the ulcers previously described. In infants too, who have died with all the ordinary symptoms of hydrocephalus, such as rolling of the eyes and of the head, tossing of the hands, convulsions, &c. ulceration of

a peculiar form, so far as I have had an opportunity of seeing, occurs, attacking the mucous follicles, which have the appearance of black specks enclosed in thick uneven elliptical laminæ on the mucous coat; these ellipses, beginning in the large intestines and diminishing in size in the small intestines, become more indistinct in the upper portions of the tube, and are scarcely visible in the duodenum. The same appearance has been described in one of the cases previously detailed, conjoined with ulceration and destruction of the mucous membrane. No other kind of ulceration have I seen, however, in the hydrocephalic subjects, and its occurrence is sufficient to indicate the utility of considering the primæ viæ as the principal source of that disease.

A case of some interest, with regard to another disease, it may be worth while to record more at length.

Case 4.

Lewis M'Guire, age 56, admitted into men's medical ward September 26th 1827, said he had been sick for some weeks, first with anorexia, nausea and headach, afterwards his skin became jaundiced. Symptoms on admission,—skin and conjunctiva of the eye of a bright yellow or golden colour, tongue white, furred, and cracked in every direction; bowels open, no pain. Ordered blue mass, and frictions of strong mercurial ointment, light diet. 27th, cups to right hypochondrium. 29th, no better. Skin of a deeper colour and dry, ordered calomel and opium. October 2d, bowels too much open, strength generally reduced, tongue dry and cracked, voice weak and tremulous; ordered cretaceous julep with tr. opii and enemata of flaxseed, mucilage and laudanum. 3d, bowels improved, but his strength is failing. P.M. Sinking, tongue the same, mind wandering; ordered stimuli internally and externally. He died on the 7th, having ejected from his stomach before death three quarters of a pint of dark fluid resembling coffee grounds.

Autopsis.—Liver of a natural size, bile natural, no obstruction of the ducts, or apparent irritation or inflammation of these tubes, stomach slightly softened at the large extremity in one spot, but at the anterior surface the mucous tunic appeared rather thickened. No injection or redness of stomach, but it had a yellow tinge. Intestines of a dark colour externally; on opening the large intestines they exhibited a bluish appearance, and irregular dark red spots of apparently effused blood in their mucous coat, accompanied by a

lymphatic effusion. The centres of these dark spots were the seat of ulceration. This appearance was chiefly observed in the cœcum.

Remarks.—It will be seen from the treatment pursued in this case, that the liver was thought to be materially concerned as the seat of the disease, which it was not. The appearances presented afford a strong illustration of the truth of that pathology of jaundice taught by the professor of the practice of medicine in the University of Pennsylvania, ascribing it mainly to a derangement of the chylopoietic viscera, in which the serum of the capillaries undergoes a morbid change.

In addition to the cases already cited, the space to which this paper must be confined will allow of the detail of but one more, and that with respect to a disease whose title is indefinite, and its pathology obscure; a disease, for which the powers of medicine were often unavailingly invoked.

Case 5.

Margaret Anderson, age 33 years, admitted into women's clinical medical ward in the spring of 1827, had been a very plethoric and healthy woman. Some time previously to her admission she had been seized with fever. On admission the account taken of her case was as follows:—General emaciation of whole body, entire loss of appetite, soreness of the muscles of the extremities, so as not to bear the slightest touch; hoarseness still exists amounting almost to aphonia. Has been treated with active purgatives and emetics, much to her disadvantage; has had a blister to her breast for the hoarseness. Ordered blister to be repeated, and anodyne expectorants, speech in a few weeks returned, soreness of the extremities was soon relieved. Generous diet allowed, and anodynes at night. April 25th, pain at stomach for which she was leeched, and black drop ordered, and anodyne mixture. May 20th, severe paroxysms of pain in bowels, with tormina, which nothing could relieve. Lingered until June, and died with all the symptoms which characterize marasmus, or tabes mesenterica.

Autopsis.—Liver, kidneys and uterus natural, ovaries enlarged, stomach entirely situated to the left of the spine, in the left hypochondrium. The greater extremity uppermost, and in contact with the diaphragm. The lesser extremity lowermost, and in contact

with the left side of the spine, the duodenum lying perpendicularly on the spine. The rectum bore extensive marks of previous ulceration of the mucous coat. Most of the ulcers had cicatrized, and this appearance was noticed through the whole of the colon, but was much less in the cœcum. In the rectum and lower portion of the ileum were observed some dark coloured tubercular thickenings of the mucous coat and elevated laminæ of the same, red and florid, with well defined edges. The rest of the mucous surface had the appearance of having been ulcerated and cicatrized. The small intestines especially were altered by chronic inflammation, and had a granular aspect, as if flour had been dusted over their surface. The glands of the mesentery somewhat enlarged.

Remarks.—This case will illustrate the effect of ulceration of the intestines, and the time it may continue, as well as the recuperative efforts which the system can make. It has been doubted whether the mucous membrane, after being destroyed by ulceration, could be healed or regenerated. That it may be is admitted by TROILET, ANDRAL, HEWITT and others, who have directed their attention to investigations of this nature. But a remark which is made by HOWSHIP, in his treatise on the bowels, may shed some light on this as well as similar cases. I have observed, he remarks, that the new surface, when the ulcers have healed, is neither capable of absorbing nor bearing irritation so well as the original structure.

As it respects the diagnosis and treatment of ulceration of the intestines, it was not intended to dwell upon them, further than what is stated in the record of the cases quoted.

I have thus endeavoured to prove the frequency of a disease which is not often suspected. I do not suppose that ulcerations of the intestines always exist in diseases similar to those here recorded. On the contrary they do not. But it behoves the enlightened physician to be apprized of the dangers with which he has to contend, in order that he may, if possible, avoid them by a vigilant and patient investigation into the nature and seats of disease. Baffled, as we must often be, in our conclusions with regard to internal diseases, as deduced from outward signs, we should not believe, with some physicians, that little utility exists in investigating, post mortem, the causes and effects of disease. On the contrary, morbid anatomy being the

surest method of determining a correct diagnosis and pathology, we should assiduously appeal to it, until greater certainty and security are attained in forming those opinions which are to regulate the practice of medicine.

ARTICLE XIII.—*Remarks on Yellow Fever: being an Attempt to explain the Cause of this Disease first appearing along the Wharves of Sea Port Towns.* By SAMUEL EMLEN, M.D. One of the Physicians of the Pennsylvania Hospital.

Read before the Philadelphia College of Physicians.

It is with diffidence I venture to offer any thing in addition to the copious materials already before the public on the subject of yellow fever. The warmly controverted question of its foreign or domestic origin, which seems unavoidably connected with every discussion of the subject, has led the contending parties in this country, as well as abroad, into occasional altercations which evinced an entire absence of that temper necessary for dispassionate inquiry. I should deeply regret seeing the controversy in such a spirit revived; and I feel as entirely averse to offering the slightest cause for its renewal as I am totally disqualified to take part in such a contest.

Having been a member of the Board of Health of this city in the year 1819, when the yellow fever made its appearance in several situations along the wharves of the Delaware, in conjunction with the president of the Board it became my duty to inspect the premises of the sick and to make inquiry into the probable source of the disease. Acting at the time as secretary to the Board, and during the quarantine season receiving daily reports by mail from the Lazaretto physician of all vessels detained as well as those permitted to pass to the city, I was already prepared to decide with some confidence as to the probability of the disease having originated from vessels which had arrived from a foreign port. I did not indeed hear of any vessel whatever being so suspected, and I am able to say with certainty as respects the first cases of the disease, which occurred in the ferry tavern on the upper side of Market street, and

two fatal cases which occurred in the buildings contiguous on each side, that there was not at the time, nor had been from the commencement of quarantine, any vessel near them from the West Indies or any sickly port; and I had the assurance from the sick and their friends that they had not been on board of any foreign vessel for some months. Not long after the occurrence of these cases, others were reported, some of which were in situations remote from each other, but all near to the Delaware, amounting to fifteen or twenty patients, and in no instance which came to the knowledge of the Board was there any vessel suspected as the source of the disease*. The sick on Market street wharf, and all others where it was practicable, were removed from the city, their apartments cleansed, white washed, &c. and then closed till cool weather.—No farther extension of the disease took place.

With respect to the local causes said to have existed, some erroneous statements have gone abroad. It was stated in one of our medical journals, that the owner of the ferry on Market street had been accumulating for months a compost heap before his door of vegetable and animal matter for the purpose of manuring his farm in New Jersey. The occupant however had no yard to his house, and it must be well known that no such collection of manure would have been permitted to lie on the wharf before his door. It is true there was some vegetable matter somewhat offensive in an apartment under the tavern occupied by the market people as a deposit for their produce, and the grocery store and small yard adjoining were in a filthy state, but by no means as much so as many other places in the city which had been represented to the Board as nuisances, and where no disease was produced. In several other situations, where the disease appeared, no local filth was discovered.

I was prepared to admit that the preponderance of medical opinion was on the side of the domestic origin of this form of fever, amongst those who had been thoroughly conversant with it from actual observation; though it must be admitted that amongst those on the other side were many equally experienced of the most respectable and distinguished members of the profession. Having had the

---

* The Board, in a reply to inquiries from the Board of Health of New York, stated that "all the sick mentioned were resident in this city, and that the disease had not been traced to any vessel or any stranger arriving from abroad in this place."

cases of yellow fever related to occur under my personal observation, and being satisfied that the disease was not in any of the cases referred to brought from abroad, I have presented this statement to the college as additional confirmation of the disease occurring without the slightest foundation for tracing its origin to a foreign source.

Being satisfied on this head, my attention was particularly directed to a consideration of the causes which were likely to operate in producing yellow fever on the wharf, where there appeared to be less of the materials likely to produce a poisonous miasma than were to be found at the same time in many other parts of our city where no fever of the kind ever originated. That this formidable disease has primarily appeared in this situation in all places where its existence has been recorded is, I believe, without any well attested exceptions; and this striking fact is alleged by a very respectable writer, Sir GILBERT BLANE, to be a sufficient evidence of itself that the disease is an imported one. The advocates of the local and domestic origin of yellow fever have not advanced reasons in explanation of this circumstance which can be considered satisfactory. It seemed evident that certain agents, not well understood or accurately defined, were necessary to produce this disease on the water's edge, which were not present in other situations in the city remote from this locality. It did not appear that more materials were to be found on the wharves likely to produce a mischievous and fatal effluvia than could be pointed out in many other parts of the city and districts where no disease was produced. Besides numerous filthy houses, yards and alleys, in very thickly settled parts of the town, there was every description of accumulated filth scraped from the streets and deposited immediately in the vicinity of tenements occupied by a poor and negligent population in the skirts of the city; as well as large collections of oyster shells in a very offensive condition, and other nuisances, which were frequently complained of to the Board of Health, and by them inspected, but never producing yellow fever.

In the very interesting and ably written papers "on the causes, phenomena and laws of epidemics," by N. CHAPMAN, M.D. published in the Philadelphia Journal of the Medical and Physical Sciences, speaking of the causes producing yellow fever, the professor remarks, "whatever may be the extent of vegetable putrefaction removed beyond the watery margin of the city, we have no reason to believe that it is adequate to such an effect: disease it will very

often excite, though not this precise fever. These views, which I suspect are in part original to myself, rest on a very solid foundation. Thus the fever has been invariably found in this narrow position. There is no proof as far as I know on which we can rely of its prevailing any where else, though undoubtedly the contrary is affirmed. Could mere masses of putrefaction produce it, we should have it throughout the country, where indeed they exist more abundantly. The filth of our cities proves inoperative to this effect except in this particular situation." And in another place, speaking of the cases of yellow fever which are alleged to have occurred in the interior of our country, (though they seem to him to be very imperfectly authenticated) the same writer states, "it is not improbable that on the borders of our vast lakes, or of those rivers which pervade the interior, there may be a condition of things approaching so nearly to that of our sea ports as to be productive of like results. Even admitting the fact, I do not perceive that the opinion I have advanced is materially affected, as in such positions we have still the influence of *water* which I deem so essential in the production of the fever." "The nature of the cause which modifies exhalations in this position, so as to generate pestilential fever," the Dr observes, "is wrapt in obscurity*."

If we shall ever be able to determine with certainty what is, and what is not, essential to the existence of this form of fever—it must be by a patient and careful observance of all the facts connected with the appearance of the disease, from its commencement to its decline. It is only from facts, that an induction of inferences can be made likely to offer any explanation which will be satisfactory.

That the subject presents great difficulties is abundantly proved by the high respectability of the numerous authors who have given us so many volumes of description and of controversy; and notwithstanding all of which there is not at the present period, as Dr CHAPMAN justly observes, "hardly one point connected with it accurately determined."

What the materials are, which produce the fever-generating miasmata or malaria, physicians have been generally agreed in—but a late

---

* Vide Thoughts on the Causes, Phenomena and Laws of Epidemics, with Suggestions for their Prevention and Suppression, by N. CHAPMAN, M.D. Philadelphia Journal of Medical and Physical Sciences, No. 17, November 1824, p. 119, 120, 122.

writer of authority, FERGUSON, has with much ingenuity denied the truth of the generally received opinion on this subject, and asserts that the only indispensable condition for the production of this poison "is paucity of water where it has recently abounded," and that "it is incident to the last or very advanced stage of the drying process," and "has no connection with aqueous or vegetable putrefaction."

The notorious and numerous instances related of fevers produced by rotting flax and hemp in ponds of water, in France and other places, and the uniform cessation of such fevers by relinquishing the practice,—as well as of malignant fevers, no less obviously produced by rotten coffee, or other vegetable matter in a putrid state, on board ships—are proofs sufficiently demonstrative, to say nothing of swamps, that the general belief on this subject is correct; and, I think, cannot fail to satisfy all, except such amongst the profession (of whom just at this time there are not a few) who seem to be seeking notoriety by displaying their ingenuity and learning in the support of paradox.

That vegetable putrefaction will produce fever in those exposed to its influence, under certain conditions, is not only evident from universal observation, but the recent experiments performed by GASPARD and MAGENDIE* go decisively to confirm the fact; if indeed there can be any doubt upon the subject. They have shewn that both putrescent animal and vegetable matters, when injected into the blood-vessels of inferior animals, produce effects strikingly similar to those exhibited in the human subject labouring under malignant fevers produced by miasmata. But in what does the miasma producing yellow fever differ from that producing intermittents and remittents? Dr MILLER remarks that miasmata may be properly divided into mild and malignant, and Dr RUSH ascribes yellow fever to "more active miasmata" than those which produce common intermittent and remittent fevers. Dr ADAMS observes that the plague originates in towns, ague in marshes, yet, says he, "there is reason to believe both are in part attributable to properties in the soil, though each of its own kind†."

---

* Vide Journal de Physiologie, June 1822 and January 1823.

† Vide Elements of the Etiology and Philosophy of Epidemics, by JOSEPH MATHER SMITH, M.D. Fellow of the College of Physicians and Surgeons of the University of New York, &c. &c. New York, published 1824, p. 67.

It must be obvious that miasma varies according to the quality, variety or quantity of the putrescent materials producing it (as the fevers induced by it vary from the simple intermittent to those of the highest malignancy), or that the same effluvia which in the country, from the presence of a purer air, only produces the milder forms of intermitting and remitting fevers, will in a city, where the vitiated air of a crowded population is superadded, produce a malignant fever. But it seems that those putrescent substances which develope a poisonous miasma do not produce a malignant or yellow fever in our cities except on the water's edge. The miasma here must be then either more virulent than that escaping from putrid substances in other parts of the city, or there must be something present on the wharves which is necessary to cooperate in the production of this form of fever, which does not exist in situations farther removed from this locality.

It occurred to me that the most probable cause which gave efficiency to the poisonous effluvia escaping on the wharves in the production of yellow fever was the river itself. That the water evaporating and furnishing a recipient for the poison, it was concentrated in the dense fogs which are seen hovering over its surface and along its borders as soon as the nights begin to lengthen and the autumnal season approaches. It seemed that the miasma which was produced during the heat of the day escaped, by ascending with the imperceptible vapour into the higher regions of the atmosphere, without producing any mischievous effects; but as soon as the cool nights and condensation of the watery vapour commenced, it became entangled in the fog, and produced disease by being thus kept in a more concentrated and virulent state within the sphere of respiration*. Connected with these phenomena a number of facts presented, which I thought gave additional confirmation to the theory.

The first appearance of fever was found to correspond with the approach of cool nights after previous intense heat had existed for some months; and it appeared to me that if the solar heat, acting upon the sources of the poisonous effluvia on the wharves, was alone

---

* The mode in which the poisonous miasma is introduced into the system forms no part of this inquiry, but whether that be through one or all of the accessible surfaces, the skin, the lungs or the stomach, the application of the reasoning above is not affected by the admission of either or the whole of these inlets.

sufficient to generate this form of fever without the adventitious help alluded to, as that is often more intense for a long time previous to the commencement of the cool nights and the accompanying fogs or mists than afterwards, we ought to look for its appearance earlier in the season. Besides, as there is certainly more heat during the day at the period of the year when this fever occurs, and consequently more of the effluvia of putrefaction escaping, than during the night, the day-time is the period when the danger of exposure on the wharves would be increased, whereas the danger is unquestionably much greater, if not altogether, at night and early in the morning before the condensed moisture hovering over the river and its margin is dissipated*.

It was from the observation of this law in relation to the common autumnal fevers, the coexistence of these with the appearance of fogs along the rivers, over swamps, ponds, mill dams, &c. the materials for producing miasmata being also present, and the evident controlling influence which the motion of the foggy strata seemed to have in the propagation of these fevers, that I was led from analogy to apply a like explanation to the appearance of the yellow fever in the neighbourhood of the wharves. In both instances the disease commences with the same meteorological phenomena and in both the danger is only apprehended by exposure to the miasmata when uni-

---

* That miasmata are elevated into the upper strata of the atmosphere during the heat of the day is proved by the fact mentioned by De Lisle and other writers of the mischievous effects of the evening dew. "The evening dew (says this writer) is so much dreaded at Rome, from the proximity of the Pontine marshes, that as soon as it begins to be perceived the inhabitants shut themselves up in their houses. But the moment the first copious precipitation of vapour which accompanies the close of a hot day is over, they all sally forth again and the streets are more crowded than ever." If the poisonous malaria is thus concentrated and falls in a haze, from the condensation of vapour in the higher regions; the inference I think is clear and incontestible that the same poison escaping at night, over which a mist or fog is hovering, must become entangled and concentrated within it. But as regards the precipitation in the evening dew of the effluvia arising from our wharves, the limitation of the source of this poison is here so narrow, that I have not thought it probable that, after having passed into this elevated region, it would in any quantity fall again upon the same circumscribed spot. It would become too generally diffused in the air, if not always wafted away. I have therefore not considered this phenomenon as connected with the production of yellow fever.

ted with a moist and foggy atmosphere, which is generally after sunset and early in the morning.

But where the analogy is still stronger, and the fact more striking and confirmatory of the hypothesis offered, is, that the generation of all these miasmatic fevers is arrested abruptly by the reduction of the temperature to the freezing point; at which time the appearance of the watery vapour or fog which just before had enveloped the poison is also forthwith prevented. Now it is not probable that the putrefaction which had been going on and producing miasmata and an increase of disease whilst the thermometer stood at thirty-three or thirty-four degrees (and higher than which it still remains during the day) is immediately suspended by a further reduction of the temperature to thirty-two degrees at night. It is more probable that the watery receptacle only was thus precipitated, which had hitherto ensnared the miasma as it escaped from the putrescent materials.

It is a fact well known, that when our cities have been visited epidemically with the yellow fever, so far from the disease diminishing gradually as the weather became cooler, the cases of fever were multiplied daily, in the ratio of its duration, till the temperature was at the freezing point, when the occurrence of new cases ceased at once; the same state of things having obtained in this instance, though upon very different principles, as during the heat of the summer, before the vicissitudes of temperature occurred upon which the well known meteorological phenomena of fogs depend. In the one case the miasmata escaping with the water in a state of volatilization ascend at once into the higher regions of the atmosphere without doing mischief; and in the other the condensed moisture concentrating the poisonous effluvia and holding it within the reach of its victims is promptly precipitated in the form of frost, and its sickening effects cease. Is it probable, as stated by Dr J. Mather Smith in his work on Epidemics*, and other medical writers who advocate the local origin of yellow fever, "that the pestilential soil becomes more and more prolific of the poison as the epidemic rises to its height," whilst the temperature is daily thus actually diminishing? Or is it not more likely that, as the gradual reduction of heat must be accompanied with less and less of putrefaction, the increase of the miasma and its effects is owing to the continued accumu-

* Vide Work on Epidemics, before referred to, by J. Mather Smith, M.D.

lation and retention of the poison by the frequent returns of the damp and foggy nights, by which means it is conveyed gradually into the houses, and shaded alleys and streets, adjacent to its source?

In the same work on Epidemics, Dr SMITH observes, that "perkoino-miasma (by which name he calls the poison producing yellow fever and plague) is destroyed by the reduction of the atmospheric temperature to 32 deg. of Fahrenheit"—whilst "all writers testify (he says) that the plague disappears in Palestine during the extreme heat of summer; or, as ALPINUS asserts, as soon as the sun enters Cancer." From which statement it would appear that heat and cold are both destructive of miasmata—and however paradoxical the fact may seem, it is perhaps no more so than that which is generally admitted, of the necessity of a mean temperature approximating 80 deg. of Fahrenheit for some months before yellow fever can be produced; whilst the reduction of the temperature daily, during the continuance of the fever, so far from diminishing the extension of the disease, actually increases it till the freezing point arrives, when it abruptly ceases altogether. This obtains even in the warm southern latitudes. Dr J. M. CAMPBELL describing the yellow fever as it appeared in Charleston in the year 1819, states, "that a severe frost always puts an end to the disease, while cool weather increases it." I know not how these embarrassing facts can be explained, unless it be by the meteoric influence which has been suggested.

Dr JOHN WATTS, JR*, remarking upon the degree of heat said "to be essential to the appearance of this fever as an epidemic," states, "this degree of heat alone (80 deg.) however, is not productive of yellow fever; for its appearance is not witnessed, or the spreading of it observed, if a case of it be accidentally or otherwise introduced, unless the causes of a local are superadded to those of a general nature. With the precise intensity, variety and nature of these local causes we are not as yet by any means acquainted; but we have a strong presumptive proof, that all of them partake more or less of the miasmatic character; and that some of them are strong concentrated exhalations, nearly allied to those which produce the ordinary remittent fevers. How far it is necessary that they should be com-

* Vide an Account of the Yellow Fever which appeared in various parts of the United States during the summer and autumn of 1819, by JOHN WATTS, JR, M.D. "Medical and Surgical Register of Cases in New York Hospital."

plicated with the agency of adventitious or accidental matters, or modified by the alternate influences of heat and moisture, and certain vicissitudes in the temperature of day and night, we cannot now determine; but we have little doubt, that as the attention of physicians shall be turned from the illusory researches on the subject of contagion, and more sedulously bestowed on the miasmatic origin of yellow fever as developed by the agency of solar heat and meteoric influences, that we shall look back with surprise on the obsolete doctrine of its contagion, that it should so long have kept possession of the mind, to the exclusion of more philosophical principles of knowledge."

It is, I am persuaded, only with such sentiments kept in view, that we can arrive at the truth in relation to this long controverted question; and though, perhaps, strictly correct, as stated by Dr Good*, when treating of the subject of this fever, "that of all the subdivisions of general philosophy, there is none so little entitled to the name of a science as meteorology itself," yet I think there are some facts, a knowledge of this science developes (imperfect as it is), which will be found to explain some points of difficulty hitherto presenting themselves in the consideration of this subject.

The formation of fogs or mists is very irregular and uncertain, it is true; but this fickleness may offer the most satisfactory explanation of some of the embarrassing facts, not only connected with the first appearance and location of yellow fever, but also of its very eccentric history whilst prevailing as an epidemic.

Sir H. Davy†, in an interesting paper upon the formation of mists over the beds of rivers and lakes, observes, "the appearance of mist over the Danube in the evening uniformly coincided with the diminution of the temperature of the air from three to six deg. below that of the river; and the disappearance of fog in the morning, with the elevation of the temperature of the air above that of the river." And "when the temperature of the atmosphere remained till after dark higher than that of the river, there was not the slightest appearance of mist." But at the same time, the author states the important fact, that "great dryness of the air, or a current of dry air

---

* Vide Dr Good's "Study of Medicine."

† Vide Some Observations on the formation of Mists in particular situations, Philosophical Transactions of Royal Society of London, 1819, p. 123, by Sir H. Davy, Bart. F.R.S. V.P.R.I.

passing across a river, will prevent the formation of mist even when the temperature of the water is much higher than that of the atmosphere." So that when the season occurs for the appearance at night of the dense and ponderous fogs hanging over our rivers, to which the miasmata adhere, whether disease shall, or shall not, be produced must depend upon many contingencies. That the heat necessary to produce putrefaction and the materials suited to the production of the poisonous effluvia must be present is certain. It is also well known that the presence of water or moisture promotes the decomposition of vegetable and animal matter, and hastens the escape of the morbific miasma; but it will not be contended that the putrescent materials on our wharves, saturated as they are with moisture continually, can receive from the dampness or floating fog of the night such an accession of moisture as to account for the production of a sickening and fatal effluvia at this time only, and that for want of it this process is entirely at rest during the day. The inference is then, as I have endeavoured elsewhere to shew, that all the other requisites being present, the humid atmosphere, such as is produced on our wharves by the fogs arising from the adjacent body of water on the approach of cool nights, is also a *sine qua non* in the production of yellow fever: that the fog is in fact the recipient, concentrating and increasing the virulence of the miasma escaping at night from putrid substances on or near the water's edge, and thus producing disease, which is not produced during the day, nor indeed at night without this auxiliary. But if the theory be well founded, it must still be evident, that the irregular and fluctuating phenomena of fogs, their formation depending upon the air being colder than the water, and being thus subject to the changes of temperature, will render the frequency as well as the intensity of their appearance always uncertain*. Their effects also in aiding the miasmatic exhalations to produce the fever

* According to the explicit theory of Sir H. Davy, fogs will be increased in proportion to the previous heat of the summer; because the warmer the water, the greater the variations are likely to be in the temperature of the air from that of the water, by which the quantity and denseness of the fog is regulated. This fact may explain an influence of the summer heat in producing yellow fever not before noticed; as the higher the temperature is, not only the greater is the quantity of miasmata induced, but the greater the fogs along the river, which control and give them efficiency.

will depend upon the stillness or agitation of the atmosphere. If the atmosphere be still, or if a breeze towards the wharf be present, and more especially if this be of frequent occurrence, the inmates of the adjacent buildings, and others near at hand, without proper precaution would be likely to suffer from the effects of the miasmatic poison. But if otherwise the winds should be strong, or the current of air in the contrary direction, no disease would be induced. In this way may we not explain the irregularity of the appearance of yellow fever? not only the intervals elapsing between its visits, but also the appearance of the disease in a sporadic form in different situations, as it did in this city in 1819, and its more general prevalence as an epidemic as occurred in the memorable years of 1793 and 1798? The highly concentrated poison may be slowly wafted along the wharves from its different sources, such as foul vessels and damaged cargoes, the fetid mud exposed at low tide, on which all the sewers and gutters empty their filth, and the mass of vegetable and other offal matter constantly putrefying along the water's edge, and in this way pass into open doors and windows, or along the streets adjacent and affect a few individuals, whilst those shut up, or not in the direction of the breeze, escape. This state of things may not again occur, or a strong wind or the heat of the sun may disperse the whole and no extension of the disease take place. But if the pestilential poison be sent night after night, in the same direction, in narrow and shaded streets not accessible to the sun, and into houses carelessly left open, the probability is that the disease will become epidemic. The irregular periods at which yellow fever has appeared have been attributed to an epidemic constitution of the atmosphere, or certain inexplicable occult qualities, preceded by a mean temperature of about 80 deg.*

---

* Dr Irvine of Charleston, one of our most intelligent writers on yellow fever, whilst he admits "that there is some quality in the air in the neighbourhood of the sea and its tide waters which (he says) is necessary to its appearance," yet asserts at the same time, "that the country must be unhealthy before the town becomes so; and that a season generally sickly is especially necessary to its appearance." Similar sentiments were also entertained by the late Dr Rush. But that this state of things is not essential will appear from the fact, that, in the years when yellow fever last prevailed in this city, the neighbourhood in the country round us was quite healthy; whereas, since the year 1822, we have had intermittent and remitting fevers abounding close to the city, and through the country adjacent, and no yellow fever has appeared amongst us during the whole period.

"The spread of the fever," says Dr CHAPMAN, "I have always found to be in the direction of the wind; even the line of danger," he observes, "may be drawn with tolerable precision, except when the poisoned air may be wafted over its limits by the force of winds setting in that direction." And that such fevers do arise in situations where apparently none of the materials of miasmata exist: "I have seen," the professor states, "yellow fever break out in this city, and the same has been remarked in other places, on the neatest of our wharves, avoiding as it were the foul and the dirty. By these facts," he says, "have we been hitherto exceedingly embarrassed—leading some to the conviction of the direct importation of the disease, and others to impute its origin to the influence of intense heat only." I have also witnessed instances of disease occurring in gentlemen (and there are many reported by others) who remained in their counting houses after night, or visited them very early in the morning, which were situated on wharves perfectly clean. But I apprehend the cases admit of the same explanation offered above,—the poison being carried from a distance where the cause existed. The necessity of the damp vapour of night to give effect to the poison receives additional confirmation also from this fact,—of gentlemen sickening with this fever by remaining on the wharves at night or visiting them very early in the morning, whilst those escaped with impunity who only remained there during the day.

Dr REESE, in his observations on the epidemic of 1819 in a part of Baltimore, states "that several physicians who had been attending patients through the whole course of the fever in the very centre of infection in the day-time were exempted from the malady, but by visiting once in the night they became diseased." Dr REVERE also in an account of the fever in the same city and the same year remarks, that "there was scarcely an instance of a person visiting the infected district at night without undergoing an attack of the disease, while during the day it might be visited with comparative impunity*." The fact of the great majority of those attacked with this fever being seized at night is mentioned by most writers.

Did it not occupy too much space, numerous authorities might be cited to shew that the yellow fever not only has generally, if not always, appeared in the first place on the wharves, or adjacent to the

* Vide Account, &c. Med. and Surg. Register of New York Hospital, by Dr J. WATTS, JR.

water, but has been confined to that vicinity during the whole period of its continuance wherever it has existed; whether in the West India Islands, South America or on our own continent. In this city, during the years when its fatality and extension were the greatest, it never reached farther from the Delaware than Fourth street; and this limitation of the disease, together with the direction in which it always spreads from the river towards the city, but passing slowly and irregularly, subject to many obstructions, goes to shew the influence of fog in carrying miasma, as exhibited in all situations where it exists; controlling the extension of disease and being itself controlled by every obstacle placed in its way.

In New York (Dr Miller states*, in his account of the yellow fever of that city in 1805,) the disease appeared on the East river some weeks before it took place on the North river; and this same thing occurred in the epidemic of 1803, which, he states, "was ascribed by many to the removal of the shipping from the East to the North river; but as no such removal took place in 1805, it is necessary to explain the fact in some other way," which he does by supposing "that the miasmata came to maturity two or three weeks sooner on one side than on the other."

The city of New York bordering on two rivers and thickly settled on both sides,—the disease appearing on each at distant intervals without spreading from one side to the other, offers a striking instance of the influence of the water in its production. And differing from Dr Miller in the supposed cause to which the intervals were to be attributed which elapsed between the infection of the two margins, I think a more plausible explanation would be found in the meteorological phenomena which has been suggested, than that of the miasma arriving at maturity on one side sooner than the other.

This formidable disease as it has occasionally appeared in Boston seems also to have presented many embarrassing difficulties to the medical men who have described it. The malignant fever has appeared in that town at three different periods, 1798, 1800, and 1819, (each of those periods was during summers which were remarkably hot) and was "confined to the same place and equally narrow limits." "The section of the town where uniformly it has first appeared is

---

* Vide The Medical Works of Edward Miller, M.D. &c. p. 88 and 89.

around Fort Hill, and during the year 1819 mostly one small square on the south eastern side of the hill." "The principal seat of the disease this year," says a writer in the North American Review, "was on the side of the hill, where the declivity is sudden and sharp. There was not any extraordinary filth about the spot. The houses of the poor and the yards about were dirty, but not more so certainly than the dwellings of the poor in other parts of the town, nor so much so as many houses in the country. The population was not remarkably crowded." "There are extensive flats in the neighbourhood, but not so extensive as some in other places, and these flats are covered with salt water once in twelve hours; we might however," says the writer, "have thought it probable that they furnished the morbific poison, but that the people who were on the side of Purchase street nearest the water, and whose situation in other respects was not preferable to their neighbours and whose houses are lower on the hill as well as nearer the flats, were comparatively free from disease." "The inference seems to us inevitable then," says this writer, "that the cause of the disease originated either in the earth or the water which belonged to the houses where the sick resided. That it was the earth and not the water seems to us most probable, from general considerations which we will not stop to discuss*." Another interesting fact stated by this writer and noticed by Dr Watts, but for which no explanation is attempted to be offered, is, "that this fever whenever it has occurred in Boston has made its appearance much earlier in the season than it has in most cities to the south." Now these statements have all appeared to me extremely interesting, as connected with the hypothesis I have advocated in this paper,—that the made earth which constitutes the materials of wharves or slips and the decaying logs forming their facing, to which the advocates of the domestic origin of this fever have imputed so much, were not present in the very place where the disease had always appeared. Is it at all probable that earth which has been lying on the wharves undisturbed for fifty or more years can still be throwing out poisonous malaria sufficient to induce yellow fever? If this state of things and the facing of decayed logs, which are also mentioned as so formidable, could produce this fatal form of malignant fever, should we not find the disease produced occa-

* Vide New England Journal of Medicine and Surgery for October 1819, and North American Review, No. 27.

sionally on some one of the numerous private wharves every where along our rivers: they have logs also, as well as the made earth in their construction? But the crowded population and vitiated air of a city are not present; nor is there there the same corruptible mass of materials along the water's edge which cities produce.

It also seems there were no ships near this spot to charge with the contagion. The same writer states, "It is worthy of remark that in neither of our epidemics has any mode of foreign importation been pointed out which rested even on plausible ground."

Now it seems evident that the history of this disease, as it occurred in Boston, its locality, and its singular limits, admit of no other explanation, at all probable, but that which connects the morbific poison with a moist and foggy stratum of air. For being thus more concentrated and virulent, it floats near the earth, ponderous and stationary, when there is no breeze to disturb it, but passing to and fro obedient to the impulse of the winds, and producing those hitherto unaccountable cases of disease, and observing such puzzling and eccentric limits. The sudden and sharp declivity where this disease prevailed, as represented by the writer before quoted, is precisely the spot upon which such a foggy stratum would be likely to impinge and do mischief to a population residing upon it—"whilst those inhabitants lower on the flat and apparently more exposed" escaped for the same reasons which must explain similar occurrences which are so common in the country wherever autumnal fevers prevail. The miasma either passes away from its source in a cloud of vapour, or perhaps floats over the heads of those close at hand and produces disease in persons at a distance or such as live in a more elevated situation; as was the case at Fort Hill. Similar occurrences have been frequently noticed all over the world where these fevers prevail—an example of which near this city at a place called Bush Hill is mentioned by Drs Rush and Chapman and is familiar to most of us.

But how is the early appearance of the disease in Boston to be explained? Why should the disease occur always earlier in this northern latitude and after a much less protracted heat has existed than in our cities farther south? Surely the poisonous effluvia capable of producing this disease must be sooner produced where the heat is the most intense and has existed the longest. Is there any other explanation of this fact, but the earlier accession of cool nights in

Boston than in our more southern cities, and the consequent effect upon the humid atmosphere loaded with miasmata, to which I have alluded so often?

As has been before observed, it was from reflection upon some of the facts connected with the appearance of fogs or mists in the autumnal season, which seemed to have a manifest influence in the production and propagation of intermitting and remitting fevers, that I was led to seek in the same agent an explanation of the first appearance of yellow fever being always on the wharves, or in that part of our cities nearest the water.

The miasma of the country was observed only to produce its sickening effects when the dense fogs were formed over rivers, swamps, &c. by the cool nights, and which evidently poisoned its victims precisely in the direction in which it spread itself over the inhabitants of the vicinity, or was carried by the winds. The danger too was so obviously increased by exposure at night and early in the morning, that not only medical men but the most common observers were careful, if practicable, to keep out of the night air, or an atmosphere loaded with mist or fog in situations where miasma was likely to be present.

Many instances came under my notice and were mentioned by others, of the striking effects of seclusion at night and in the early hours of the morning, preserving the health of individuals and the whole of the children in boarding schools situated in the midst of surrounding disease and when all were taken sick who used no such precautions. The immunity from disease enjoyed by persons situated behind some obstacle to the passage of fogs saturated with poisonous miasmata, such as trees, hills, high banks of rivers, &c. was also frequently observed and has been noticed in all countries where intermitting and remitting fevers are produced.

The evident connection of poisonous miasma or malaria with fog or a humid atmosphere has indeed been remarked by a number of writers on the subject. De Lisle, Sir G. Blane and Dr Chapman have noticed particularly this fact. The experiments made by De Lisle at the Pontine marshes go to prove that it is aqueous vapours which hold miasmata suspended in the atmosphere; that they are precipitated by mists which form the evening dew, and that various obstacles form barriers which they cannot pass and against which they are deposited. Sir G. Blane also remarks, "that the water exhaled from a low surface has a tendency to ascend, and, with the miasmata it envelopes, being lifted over parts on the same level, im-

pinges on the neighbouring heights"—all which, says Dr CHAPMAN, "is perfectly consistent with the phenomena of fogs and clouds." But in an elaborate work on malaria by Dr MACULLOCH* just published in London and within a few weeks received in this country, the author more clearly corroborates these statements by a detail of much interesting matter.

The necessary limitation of this paper will only permit a few lines of extracts. "It has been shewn," the author states, "that the matter of malaria combines especially with a moist atmosphere or with fogs and mists. It is in reality combined with a cloud, and since that is indefinitely transportable we can see no reason why the malaria should not be transported with it: and thus it may travel under the protection of its original receptacle to distances we can scarcely venture to limit. And to a certain extent experience proves that this actually happens," &c. &c.

When treating at length upon the subject of personal prevention under the presence of malaria, amongst other means noticed by the author, I will merely state the following as confirmatory of the fact, that the poison is held in union with the watery vapour floating in the atmosphere. The fact as it is stated by Dr M. is simply this, "that by surrounding the head with a gauze veil or *conopeum*, the action of malaria is prevented, and that thus it is possible to sleep in the most pernicious parts of Italy without hazard of fever. In Malta and elsewhere this belief is universal. Thus also in Spain and Portugal, it is a common and universal habit to draw the *mantilla* over the mouth when in suspected places, as also in foggy weather and east winds."

Dr CHAPMAN has likewise related a fact somewhat analogous: "It is indeed said," Dr C. states, "by a respectable writer, that by merely placing gauze against open windows, or sleeping under musquito nets, protection is derived against noxious exhalations, which to a certain extent may be true, and is credited by the inhabitants of our southern states." "These facts," Dr MACULLOCH observes, "are not improbable upon theory, because we can thus conceive an atmosphere from the lungs accumulated within the veil capable of decomposing the *malaria*." But the theory of the author to me appears much more improbable than the facts. It must, I think, be

---

* Vide "Malaria; an Essay on the Production and Propagation of this Poison, &c. &c. By JOHN MACULLOCH, M.D. F.R.S. &c. &c. London, 1827."

considered somewhat surprising that the writer, who had just been contending that the malaria was incorporated with the vapour or mist, should now have it decomposed from an accession of more vapour issuing from the lungs and confined within a veil surrounding the mouth. The explanation appears obvious nevertheless, and gives much additional plausibility to the theory espoused. The veil or mantilla really shuts out the poison by shutting out the humidity or fog to which it is adhering.

If then this union and concentration of miasma, in its watery vehicle in the form of fog or mist, is indispensable for the production of its poisonous effects, have we not a satisfactory reason why the most luxuriant vegetation which is seen rotting in the fields, barn yards, compost heaps, &c. in the country can often take place, as is really the case, without detriment to health? and why also the same poisonous effluvia should be eliminated within the precincts of the city from putrid masses of accumulated filth, and yet often escape without any mischievous effect? But bring such sources of poison in the immediate vicinity of a large body of water, whether a river, a pond, or a marsh, whence a mist or fog is sent to hover over and ensnare the poison as it escapes, and with such an auxiliary disease will be most assuredly produced*.

In concluding these observations I have only to add some brief practical inferences, in relation to preventive measures, which have been suggested by the views presented; before doing which I may be first allowed to state, however, that the hypothesis I have attempted so imperfectly to explain was mentioned to some of my medical friends soon after the yellow fever of 1819 in this city, and amongst others to the present vice president of the College, Professor James, who had been associated with me in the Board of Health, and at whose sugges-

---

* It may be here stated though not connected immediately with the subject of this paper, that if by excavating canals throughout our country to secure a more ready market for the fruits of a profitable industry, we actually produce disease and lessen the security of life in situations which were before perfectly healthy (and which will be the case I think there cannot be a doubt) is it not worth while to pause and consider the contested question of the comparative merits of canals and rail roads, connected (as I really believe it is) with the preservation of millions of lives? How often do we make our cupidity accessary to our miseries? And this is the case too often with governments as well as individuals. The remark here applies to the destruction of health; but it will perhaps still more frequently apply to the destruction of morals.

tion I then made some notes upon the subject, for the purpose of reading them in this place, but which have remained thrown aside till the present period. My fear has been, that I was erring with many others on the same question by drawing conclusions from too narrow a field of observation, and was considering the disease in too isolated a manner; but if it should not bear the test of a more critical and philosophical investigation which it will be certain to receive from the members of the College, perhaps the investigation may give some aid in the development of truth; besides which, on this as well as on every other question, there is nothing worthy of our pursuit.

The preventive means which may be stated as growing out of the views taken in the foregoing essay are in some respects the same as have been pointed out by many other writers on the subject of yellow fever.

The most important which occur to me are as follows:

The wharves should be carried out to low water mark, and instead of the docks intersecting them as they now do, their whole extent should present an even surface and be faced with stone. They should be covered with a deep layer of sand, and paved as the streets are generally.

Vessels of every description at the wharves should be inspected by the port physician or some other officer before the season of the year in which yellow fever appears. All ballast should be removed and the vessels requiring it cleansed and whitewashed, and frequently ventilated with wind sails.

No vessels should be allowed to come to the city during the sickly season without previous careful inspection at the Lazaretto; and when required to be thoroughly cleansed and purified.

None of the buildings facing the river should be occupied as dwelling houses; and the higher they are and the farther they recede from the water's edge the better. They should only be visited during the day, and if the weather be damp, or if obliged to be in them at night, the windows should be closed and the doors shut. A moderate fire kept in the apartments occupied, or unslacked lime, sulphuric acid, or some substance rapidly absorbing moisture, would offer additional security.

Those persons visiting the wharves or streets adjacent to the river, after night in the sickly season, should use a handkerchief, or some other veil.

All intersections of the city by canals, or the introduction in any

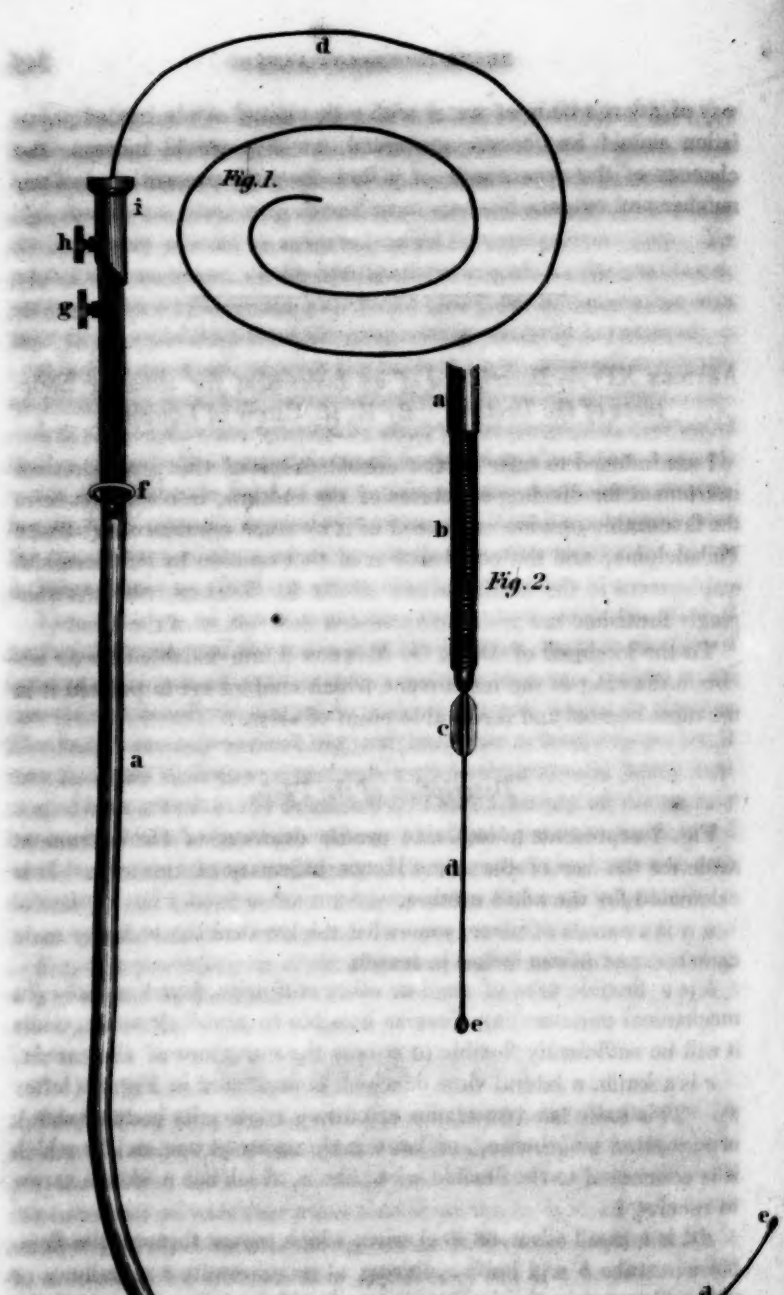


Fig. 1.

Fig. 2.

S.G. Morton M.D. Del.

F. Kearny Sc.

way of a large body of water within the limits of a crowded population should be forever prevented, as they would increase the chances of the appearance of yellow fever in proportion to their number and extent.

ARTICLE XIV.—*Description of an Instrument for dividing Strictures of the Urethra.* By E. R. CHEW of Louisiana.

I am induced to offer to the consideration of the profession an instrument for dividing strictures of the urethra, in consequence of the favourable opinion expressed of it by some eminent surgeons of Philadelphia, and the confirmation of that opinion by its successful employment in the skilful hands of Dr R. HARLAN, who has obligingly furnished me with the appended description of the case.

To the kindness of Dr S. G. MORTON I am indebted for an accurate drawing of the instrument, which enables me to present it in the most correct and favourable point of view.

Description of the Plate.

Fig. 1 represents a half size profile drawing of the instrument made for the use of the Alms House Infirmary of this city. It is calculated for the adult urethra.

a a is a canula of silver, somewhat thicker than the ordinary male catheter, and fifteen inches in length.

b is a flexible tube of steel or other stiff wire, layed spirally (in mechanical parlance) as *close* as possible to avoid elasticity, while it will be sufficiently flexible to pursue the curvature of the canula.

c is a knife, a lateral view of which is presented in Fig. 2 (letter *c*). This knife has two blades or cutting edges; its body or shank is perforated lengthwise, and has a male screw at one end by which it is connected to the flexible wire tube *b*, which has a female screw to receive it.

d d is a small silver or steel wire, which passes through the flexible wire tube *b* and knife *c*, having at its extremity *e* a bulbous or probe-like termination. This wire should be twice and a half the length of the canula *a a*.

To the end of the flexible wire tube *b*, opposite that to which the knife is attached, there is a silver cylinder about two inches and a half long, to the extremity of which there is connected, by soldering, *f*, which is a silver ring of sufficient size and strength to serve as the handle by which the knife is pushed forward or retracted. To permit this movement of the handle, there is a slit in the canula *a a*, extending to its extremity, and which also permits the flexible wire tube to be withdrawn from the canula when the head is removed.

g is a screw which secures the knife in its position when retracted within the canula by being turned upon the small cylinder.

h is a similar screw which acts on the wire director *d*, that would in the operation be pushed forward by *b* and *c*, if not thus secured.

i is the moveable head of the canula *a a*, and has a body projecting within the canula beyond the screw *h*. This body is perforated for the passage of the wire *d*, and in its side, opposite to the screw *h*, it has a hole to allow the screw to act on the wire.

The drawing of the instrument represents it with the wire *d* pushed forward, and the knife *c* as far forward upon it as the slit in the canula permits, which in this instrument is two inches, a distance discretionally regulated by making the slit longer or shorter. The knife here represented has two blades or cutting edges; but it may be made with one or more as may be desired, and being connected by a screw to the flexible wire tube, a variety of knives may be used with the same instrument. I must say of the knife that I consider it very imperfect; being all in one piece it is sharpened with difficulty; and I hope some ingenious cutler will soon improve it.

Fig. 2 represents part of the instrument of the full size, including a lateral view of the knife.

Mode of using the Instrument.

Preparatory to operating with the instrument, the situation of the stricture is to be ascertained as directed in the use of the caustic bougie, the knife by the handle *e* is to be retracted within the canula, with the extremity of which its point should correspond, and the bulbous extremity of the wire is to be drawn up to the knife; with the knife thus sheathed the instrument is introduced into the urethra, within an inch or two of the stricture, when the wire is to be pushed forward as a probe, which will, according to the peculiarity of the case,

pass the stricture with more or less readiness. To be sure that the wire is not in a false passage, it should be passed on into the bladder, however near the stricture may be to the extremity of the penis: that it is in the bladder the operator soon ascertains with a finger per anum. When this is done, an assistant holding the wire, the operator passes the end of the canula up to the stricture. The wire is then secured by the screw *h*. The screw *g*, which prevents the knife from being moved by using the wire, is now unscrewed, and the operator by the handle *f* pushes forward the knife as far as he deems sufficient, and the distance may be accurately determined by a graduated scale on the margin of the slit along which the handle passes. The stricture being divided, the knife and wire are retracted within the canula, and the instrument withdrawn.

It will be perceived that as the knife is directed or controlled in its course by the wire *d*, which passes through it, and this wire being certainly in the urethra, it is impossible to make a false passage, even in the hands of the inexperienced.

I would suggest as a substitute for the armed bougie the use of a portion of this instrument in the application of caustic to strictures, when the use of caustic should be preferred to dividing it with the knife. The caustic may be secured in an apparatus which might be connected by a screw to the flexible wire tube as the knife is; and being retracted within the canula it can be placed in contact with the stricture without the hazard of cauterizing the parietes of the urethra, which is always incurred in the use of the armed bougie.

I would further suggest, in cases of imperforate stricture in or beyond the curvature of the urethra, the use of a *lancet pointed* knife, to be connected by a screw to the flexible wire tube in the same manner as the one now described.

Case of Stricture of the Urethra, operated upon with Mr CHEW'S *Instrument.* By RICHARD HARLAN, M.D. One of the Surgeons of the Philadelphia Alms House Infirmary.

Josiah Fay, aged about 48 years, was admitted into the Philadelphia Almshouse in the year 1826, with stricture consequent to gonorrhea. He was but little benefited by the usual course of bougie treatment, was discharged, became worse, and was readmitted in

August 1827. I examined him in the month of September, and found that a stricture in the membranous portion of the urethra opposed every effort to introduce either the catheter or bougie; though, after the point of the instrument had reached the commencement of the stricture, I could perceive, by forcing it more than is advisable in most cases, a sort of dragging sensation communicated to the hand, which convinced me of the existence of false passages; this opinion was strengthened by local symptoms of long standing.

The patient states that he was treated for stricture two years ago at Albany, N. Y. when considerable inflammation was excited. He now passes urine with the utmost difficulty and pain, in a small dribbling stream. Blood follows almost every attempt to introduce the bougie, which however was daily passed in the usual manner down to the strictured portion, with the view of gradually enlarging it. The patient however soon became dissatisfied with this treatment, and earnestly requested some operation for his relief.

About this period Mr Edward R. Chew (one of the house students of the Almshouse) presented to me for examination a most ingeniously contrived instrument for cutting a passage through the *curved* portions of the urethra. I resolved to try this instrument in the present case; but I was soon satisfied that it would be impossible to pass the *wire probe* into the bladder whilst it remained in the canal of the stilette; it was therefore withdrawn from the catheter, and on the first effort was separately passed into the bladder: its distal extremity was then put through the instrument in a retrograde direction. The silver canula with its stilette was next introduced down to the stricture, and using the wire probe as a director, the stilette was now forced into the bladder with the greatest safety, and so far as the instrument was concerned with complete success; for immediately after the instrument was withdrawn, a catheter of ordinary size was introduced into the bladder.

The final success of this operation could not be ascertained in the present instance, as the patient died in three or four days after the instrument had been used, of a constitutional disease heightened by the local irritation.

On dissecting the urinary passages after death, the stricture was found to be an inch or an inch and a half in length, commencing in the membranous portion of the urethra, and continuing to some extent through the prostate gland. Three false passages were observed in the membranous portion of the canal; one of which, open-

ing immediately anterior to the prostate gland, communicated with a sac about the size of a small walnut; this cavity contained pus and grumous blood. All these false passages presented unequivocal marks of chronic derangement. The parts have been preserved in spirits.

In conclusion, I have very little hesitation in recommending the instrument to surgeons, as one of considerable value, and worthy of further trial. Indeed, with the advantages such an instrument affords, the necessity of puncturing the bladder, in cases of chronic obstructions, must be comparatively rare. Some surgeons of great eminence have objected to cutting strictures on account of the liability of the cicatrix to contract,—an objection which I conceive applies equally to the more tedious operation of caustic, and one from which the use of bougies is by no means altogether exempt.

By publishing the above description of a urethro-tome, we would not be understood as deciding the question whether such instruments should ever be used. Some of our distinguished practical surgeons object to them under any circumstances; if the wire can be inserted, they say, dilatation can be effected by bougies; if the stricture be actually imperforate, an incision from without they regard as more safe for the patient, and less difficult for the operator. Whether however such external incisions, comparatively extensive and tedious as they must be, would not be more painful at the time, and the source of more permanent irritation than the division by the urethro-tome, is a question worthy of practical investigation, and which experience must decide. As however urethro-tomes are employed in this country, in France, Germany and England,—as some of our leading surgeons are partial to their judicious employment since their revived use by our distinguished countryman, Dr PHYSICK, in the year 1795, we would recommend the ingenious modification above proposed by Mr CHEW, as lessening the dangers of the operation in all those cases to which it is applicable, and we think that the case of Dr HARLAN manifested its superiority.—ED.

ANALYTICAL REVIEWS.

ARTICLE XV.—*Chemical Manipulation; being Instructions to Students in Chemistry on the Methods of performing Experiments of Demonstration or of Research with accuracy and success.* By MICHAEL FARADAY, F.R.S. F.G.S. M.R.I. &c. &c. &c. London, 1827.

Many circumstances indicate the approach of chemistry to the rank of a well founded science. The last of the sciences in the order of time, its advances to maturity have been of unexampled rapidity. It is but a very few years since we were astounded by the extent and the magnitude of its discoveries. The career of this science, after the detection of carbonic acid by Dr BLACK of Edinburgh, was more like the brilliant pageant of a vision than the ordinary sober march of scientific truth. The vital part of the atmosphere, the combustible constituent of water, the active portion of nitric acid, were in rapid succession drawn from their hiding places, and displayed in simple nakedness before the eye of philosophy. Then came the curious bases of earth and alkali, and a long list of undecompounded bodies entirely unknown to preceding ages, for they had slumbered under the shadows of composition.

Chemistry, numbering at its outset but four elements, is now able to enumerate more than fifty, and the list seems far from being completed. For a few years past the march of discovery has been less rapid and magnificent, and chemists are now engaged in ascertaining correctly the present limits of their science. The facts brought to light in such distracting variety and rapidity are now sustaining a more cautious and a closer investigation; and there is in progress a gradual correction of the errors into which discoverers fell in the haste and tumult of a hurrying progression. THOMPSON's First

Principles, DALTON'S Atomic Investigations, and the extensive and accurate analyses of BERZELIUS have done much to ascertain our knowledge, and to point out the landmarks of chemistry. There was wanting a good manual to direct us in the path of accurate investigation, and to point out the sources of fallacy which so often arise from defective apparatus and ill conducted manipulation. The able and practised chemist may be benefited by such a work, but to the tyro in experimental investigations it is all important to be spared the disappointment which is sure, without such a guide, to attend his initial processes. To the latter the able treatise of Mr FARADAY is of great value, for it contains the knowledge which is essential to a judicious and successful *entrance* on the pursuit of practical chemistry, and which was not, until now, embodied in any single work, and much of which is not to be found in any other work. His object "is to facilitate to the young chemist the acquirement of manipulation, and by consequence his progress in the science itself."

"The volume indeed is not intended to supply the place of, or imitate in its nature, any one of the numerous and useful works on chemistry now extant, but to be rather an accompaniment to all of them, supplying that portion of knowledge which, however essential to the learner, was not of a nature to consort with their more scientific contents. In the pursuit of this object it is intended to describe—

"The conveniences and requisites of a laboratory:

"Chemical apparatus and its uses:

"The methods of performing chemical operations:

"The facilities acquired by practice: And

"The causes which make experiments fail or succeed."

Although Mr F.'s directions for the filling up of a laboratory are good, there is much stated which is to be found in other books, and nothing particularly worthy of notice in a cursory review.

In the second section, devoted to the subject of balances and weighing, there is an almost painful degree of minuteness, which is attributable to the importance—the great importance of this process in analytic investigations, which are often made on very small quantities of matter. In this section there is not much that is original, and but little that would not be suggested by the common sense of every experimenter. Among the minutiæ we observe that hot substances create currents in the air; that when paper is used to place powders on, it should be hot pressed and cut, not torn; that weights

exceeding a grain should not be placed in a scale until supported against its impulse; that liquids are to be removed in small quantities by bibulous paper; that some very deliquescent or vaporizable bodies may be easily weighed by adding them to a known weight of water, &c.; that currents in water affect erroneously the estimates of specific gravity as do also imperceptible bubbles of air, especially in water lately relieved from pressure, as happens when drawn from the bottom of deep water.

The third section treats of measures, and is occupied chiefly by descriptions of the modes of forming graduated glass vessels and tubes, which he effects by means of mercury accurately weighed. Dr HARE's excellent mode of measuring liquids and gases, by means of a graduated metallic wire of uniform diameter, passing through an air tight collar into a circumscribed cavity, is very cursorily noticed. We who have used this instrument believe it to be superior to every other for the purpose intended.

Section fourth is devoted to the subject of heat. "The sources and management of heat" are deemed, very properly, of so much importance as to swell this section to an unusual size. Though very minute and satisfactory in its details, there is not in it much that is new or which may not be found in other essays on the same subject. The part of it devoted to the description and uses of spirit lamps afforded us particular pleasure, because we have found from experience the great convenience and advantage of these neat and manageable instruments. In conducting the experiments of a course of chemistry during summer, we have actually found it economical to substitute them for even charcoal fires, wherever the heat they afford is sufficient for the purpose. At pages 104 and 305 are cuts representing lamps for alcohol, varying in form according to the uses to which applied.

"A very powerful and useful spirit lamp is formed by making an aperture of 0.8 or 0.9 of an inch by an inch and a quarter, through the body of the lamp and fixing in it four burners upon Count Rumford's principle, each of a length equal to the width of the aperture and the one-eighth or one-tenth of an inch wide. These are to be parallel to each other and at such distances as to have five spaces or air ways. These burners rise about a quarter of an inch above the lamp, and descend as low as the bottom of the body, being fastened in the aperture by their edges. Each burner is closed beneath, but has a small hole into the lamp as a passage for the alcohol, thus forming as it were a part of the lamp. The lamp is supported on feet," &c.

The object of this arrangement is to permit the free access of air

to the flame of the burners, which are set in the middle of the lamp and occupy its central aperture. The chief objections to this lamp are the shape of the flame and the descent of the heat by the burners to the alcohol which is thereby too rapidly evaporated through the vent holes. A better lamp is formed of a *circular* burner, an inch in diameter, set in a circular central aperture of an inch and a half diameter, and connected with the body of the lamp solely by three tubes which pass horizontally from the bottom of the burner to the bottom of the lamp, and afford a passage for the alcohol from the lamp to the burner. By using two or more concentric burners so different in diameter as to leave air-ways between them, a very large and powerful flame may be obtained. We have thus a circular flame, and as the connection of the burner with the lamp is so remote from the flame, no sensible degree of heat reaches the alcohol in the body of the lamp. COOPER's lamp for heating tubes, figured in page 305, is too complex. Burners of the required length for such purposes may be set in a central aperture of a long tin box, and afford equal heat with less trouble and expense. In this section we are pleased with the simple and ingenious contrivance to render smokeless the jet of carburetted hydrogen. As Americans too we rejoice to find so able a judge as Mr FARADAY awarding to Dr HARE the credit of having originated the "oxyhydrogen blowpipe," an honour unquestionably his, but long disputed by certain English philosophers.

The important subject of "comminution" is treated minutely in the fifth section.

Section the sixth is devoted to solution, infusion, digestion, &c.

"All aqueous solutions of solid bodies are heavier than water; upon this difference is founded a very convenient indication of solubility, frequently useful, always easy. It is to suspend a piece of the substance in a glass of clear undisturbed water; if the body be soluble, a descending current will be seen to fall from it. If it fall rapidly and in dense striæ, it will indicate rapid solubility and the formation of a dense solution; if it fall in a very narrow stream it will indicate only moderate or slight solubility; and by its descending rapidly or in a slow broad stream or by resting about the substance a judgment may be made of the comparative density of the solution produced. If no descending current appear, nor any fluid round the substance of a refractive power or colour, different from that of the water, then the body must be very nearly, if not quite, insoluble at common temperatures."

At page 182 is represented a mode of pouring a liquid so as to avoid the loss of a drop, and to conduct it to any given point. This

is effected by applying the lip of the vessel, from which we intend to pour, to a wetted glass rod placed in a vertical or nearly vertical position. Along the rod the liquid is conducted to any part of any vessel used as a recipient.

In the seventh section, devoted to "distillation" and "sublimation," there is much both to interest and instruct. We were particularly struck with the various uses to which caoutchouc, as prepared by Hancock, may be applied as a medium of connection between the tubes of an apparatus. Its toughness and flexibility render it much more convenient than any other substance.

It is singular that quicksilver-bottles should not be recommended as retorts for the production of oxygen and carbonic oxide gases, as they are so much cheaper than those usually made for that purpose. By forming a screw on a bent gun barrel a junction is made much more secure than that which is formed by grinding. Such a tube may be transferred to any other iron bottles as the screw is almost always the same.

The subject of precipitation so very important to the chemist is treated of in the eighth section. Nothing unusual is there related, except the mode of agitating a solution by blowing through a tube having its lower end near the bottom of the containing vessel.

The ninth section contains instructions for forming filters, for decanting, washing, &c. &c. The description of the mode of making a paper filter is perhaps more obscure than any other passage in the book. Instead of the mode of performing hot filtration suggested by our author, we would recommend Dr HARE's apparatus for the same purpose or a wooden box into which steam is directed so as to surround the funnels which pass through it.

In the tenth section on crystallization we noted particularly the following:—

"A very interesting and in some cases useful process is the gradual conversion of several small crystals into one large one. Dr WOLLASTON, who communicated it to me, has permitted me to describe it here. If a small quantity of sulphate of nickel in solution with a slight excess of acid be evaporated in a watch glass, it will probably, on cooling, yield a crop of numerous small crystals; but if set aside for a few weeks in a place subject to the changes of atmospheric temperature, its appearance will gradually alter, the small crystals disappearing, the larger increasing, until ultimately only one or a few large ones are left. This effect depends on the greater extent of surface exposed by the small crystals, as compared to their mass, than by the larger crystals; so that when any increase of solvent power in the surrounding fluid is occasioned by a slight increase of heat in the atmosphere, the small crystals are dissolved to a greater extent than the others;

but upon the decrease of temperature, the deposition is equal upon all. In this manner the small ones are gradually dissolved, and the large ones become larger."

In the eleventh section we observe some curious suggestions relative to evaporation by exhaustion. After mentioning LESLIE's mode by sulphuric acid, the author tells us of Mr COOPER's mode of removing an exhausted vessel from the plate of the air-pump without letting in air, and also describes another mode of exhaustion by spirits of wine as practised by cuppers. The exhaustion by a Torricellian vacuum for similar purposes, stated in Dr ARNOTT's last work, is not noticed.

The twelfth section treats of coloured tests. The mode of preparing solutions of red cabbage is the common one. The reviewer finds that red cabbage cut into small pieces, and dried under sand in trays, retains nearly the whole colouring matter, and may be kept in sealed bottles for a very long time.

In the thirteenth section on "crucibles" there is mentioned a very curious fact alluded to elsewhere. Solids, continuing such, become some of them crystalline and brittle even by time without artificial heat, but more rapidly when occasionally heated. Silver crucibles are subjected to this change and become very brittle.

To every student we would recommend a careful perusal of the instructions for lighting and sustaining a good fire, for this is one of the things least attended to, though of great importance and of difficult execution.

Our limits do not permit us to notice in the fifteenth section much that is curious and useful respecting pneumatic chemistry. The reader will be surprised to find, in such a work, no notice taken of the useful and simple self regulating gas reservoirs of GAY LUSSAC and Dr HARE. He will also look in vain, under the head of "measurement of gases," for the various useful contrivances of Dr HARE for that purpose, whilst he will see a delineation of other instruments much less philosophical and convenient.

It may not be useless to state, that a very good mercurial cistern may be made of sheet iron, turned up and folded at the edges so as to leave no apertures below the upper edge of the box thus formed. Paper boxes are sometimes made in that manner. To give the box strength it may be imbedded in a wooden trough in resinous cement. By inserting a wooden mass, shelves and a well being made in it, the trough is completed.

To distend a caoutchouc bag the chemist in Philadelphia ties it to

the spout of a hydrant and turns on the water. This answers as well as a forcing pump and gives less trouble.

Dr HARE, to hold certain gases, uses leather bags with patent brass rivets.

We have now reached the subject of "tube chemistry," constituting the most original as well as the most curious and entertaining part of the elaborate volume of FARADAY.

By treating tubes with the bellows blow pipe a good imitation, on a minute scale, may be made of a great variety of glass apparatus. Thus may be constructed retorts, receivers, impregnating apparatus, &c. &c. A chemist of some experience will read this section with surprize, and lament his former ignorance of much that would have promoted his success in investigation, and saved him a great deal of trouble and expense.

A few hints, taken from this section, will enable one, accustomed to devise, to conceive and execute the greater part of the suggestions of our author. Others must study the author, for every paragraph is instructive.

A tube sealed at one end, and bent at two points equidistant from the ends and from each other so as to give the sealed end a downward and the open end an upward direction, is useful for solution of bodies of difficult solubility where heat is necessary, because the liquid solvent, being condensed in the lower angle of the tube, may be often poured back on the solid. The above process is an example also of distillation.

By a greater number of flexures, a greater number of points of condensation may be formed and the liquid, driven from angle onward to angle by advancing the heat in that direction, is subjected to successive rectifications.

"It will be unnecessary to refer minutely to the capability of transferring backwards, afforded by different inclinations of the parts of the tubes. Thus the more fixed and more volatile parts may both be returned and redistilled without mutual interference." "Tubes are exceedingly convenient for the heating or even igniting of numerous substances in the vapours of volatile bodies which are either solid or fluid at common temperatures. If a small piece of naphthaline be put into a tube, closed at one end and held in an inclined position and the bottom be heated, the napthaline will melt, sublime, condense above, and descend to the lower end in a stream; but as soon as it reaches the hot part it will be revolatilized to be recondensed above and to flow down as before."

Other solids and liquids may be treated in a similar manner.

"It will be evident that any fixed substance, placed in the bottom of the tube,

may, under these circumstances, be heated to redness for a long time in the vapour of the volatile body, and thus the facility of acting on metals, metallic oxides, &c. by such agents is obtained."

After pointing out ingenious modes of drying precipitates, evaporating, &c. in tube apparatus, Mr FARADAY describes what he calls a *tube-pneumatic apparatus*. The forms and uses of such may be readily conceived. The advantages are obvious in operating on explosive or expensive and rare substances. By bending a sealed tube near its open end so as to give its mouth such a direction as to resemble a hook, a good mercurial gas-holder is constructed, in which with a very small portion of mercury we may collect and examine gases.

At page 413 is described Mr KER's mode of bending tubes so as to place, when the angle looks downwards, the vertex on the lower side, not immediately under the vertex on the upper side, but a little on one side, nearer to the sealed end. By such an arrangement any solid dropped into the leg having the open end will slide down beyond the upper side of the vertex into a liquid which fills the other leg and the angle, and if a gas be the result of the action produced, it will necessarily ascend into the sealed extremity and may be there collected and examined. To bend a tube after the manner described, it must be held in a direction oblique to the flame, and then bent so as to make that part of the heated portion of tube which is nearest the sealed end the vertex of the whole figure.

By means of a tube having several angles in a serrated manner, we may imitate WOULFE's apparatus, the lower angles representing the bottles, and the upper angles the connecting tubes. Gases passed in at one end will force themselves through the liquids, and finally, if not absorbed, pass all the angles and escape at the other extremity.

Every one has heard Mr FARADAY's name connected with the curious subject of the liquefaction of gases by pressure, and if not already acquainted with the mode of obtaining his results will be surprised as well as charmed with its neatness and simplicity.

"A piece of tube about eight inches long is to be selected, and its extremity sealed: then being softened in the lamp at about five inches from the closed end, it is to be bent not sharply, but obtusely and roundly, until the two limbs make an angle of about 130° or 140°. Some cyanuret of mercury is to be pulverized and dried in a wedgwood basin on the sand bath or over a lamp at tem-

peratures which, being above that of boiling water, are insufficient to decompose the salt, or at least to cause much change; it may be allowed to become a little brown, and is then to be introduced into the tube until it fills three-fourths of the closed limb. The open limb is afterwards to be wiped clean and dry, and then heated and drawn off so as to leave only a minute aperture."

The apparatus is now to be filled with an atmosphere of cyanogen and sealed hermetically. Previously to sealing it ascertain the existence of a combustible jet. When cool, invert the syphon-like tube, and begin the evolution of cyanogen by means of a spirit lamp: and cause its condensation by cold applications to the other extremity. The best test of a proper degree of heat is the evolution of a *very little* mercury. The heat should be confined as much as possible to the part holding cyanuret, and the condensation should not proceed so rapidly as to make the moistened tow or paper attached to the cooled end sensibly warm, or the moisture *visibly* to evaporate. The cyanuret becomes discoloured, fluid, and finally solid, and thus indicates the completion of the experiment. The liquid cyanogen in the shorter limb occupies nearly half an inch of its depth at the close of the operation, but disappears in a few days in consequence of the hygrometric attraction of the black mass in the opposite limb. A very moderate heat causes again its evolution.

Those gases which may be evolved without heat are extricated by placing the liquid in one limb and the solid in the other of a bent tube, and then closing it hermetically. By a proper degree of inclination the liquid is thrown on the solid, and the gas evolved is collected in a liquid state in the emptied end by refrigeration. Thus may we obtain liquid ammonia, muriatic acid, hydrosulphuric acid, &c. &c. .

The mode of ascertaining the degree of pressure in such cases is interesting. This knowledge is obtained by means of *very minute* tubes graduated, sealed at one end, and holding air in the sealed end and a small column of mercury near the mouth. The degree of compression is measured by the diminution of the length of the column of air in the air guage, which is placed within the tube on which the operator is experimenting.

At the close of this section Mr Faraday remarks that

"The economy and exceeding facility afforded by this kind of apparatus in situations distant from the usual sources of more perfect instruments, and its superiority in some cases over any other that has yet been devised, are sufficient to recommend it to full and general attention."

The section devoted to "electricity" and "galvanism," though full of important matter, contains little not generally known. We have to regret the omission of any allusion even to Dr HARE's sliding rod eudiometer in a section a considerable part of which is occupied by the subject of eudiometry. Decidedly the best instrument of its class, whether we regard its convenience or its accuracy, it is little known to the English public, and would therefore have appeared as a novelty. Nor are we less surprized at the adherence to the electric spark for eudiometric explosions, since the *calorimotor* of HARE depends not on the state of the weather, nor the dryness of the eudiometer, for *its* efficiency, but is *always* easy of application and never disappoints the operator. An experiment on the atmosphere may, with this instrument, be completed in less than two minutes, and that too without requiring the wetting of more than the tips of the thumb and finger.

In this section we observe the following remark:

"When five or ten minutes intervene between one experiment and another, it is worth while raising the plates of a battery of ten or twelve troughs or less from the cells; this affords the additional advantage of an increase of action upon their re-immersion, due in some way to draining or exposure to air."

The mode of draining by a revolving trough is too well known to American chemists to need any comment here. The passage is quoted to introduce an experiment devised by Dr HARE, which shews that the recovery of power depends solely on the presence of *oxygen* or other *electro-negative* substances. For, if we place a voltaic arrangement in a tubular bell glass, and apply to its tubular aperture a pipe and stop cock, and then immerse it in an acidulous solution, the bell glass will be filled with hydrogen gas. No recovery of power ensues from repose in that gas, nor when nitrogen gas is substituted; but chlorine or oxygen or common air reinvigorates the instrument, and in them it returns to its ordinary efficiency. We are thus enabled to advance a step towards an explanation of the power obtained by the use of acidulous and saline solutions, inasmuch as they cause the readier extrication of oxygen from the water of the solution.

The section on lutes contains nothing original. The mixture of rye flour and linseed meal, so much used by the French chemists for luting glass, is not noticed.

A very long and useful section is devoted to the subject of glass blowing, bending, cutting, tube sealing, &c. &c. The mode of

fixing wires in glass is admirably described, and deserves a full quotation did our limits admit of it. The file is often used to act on glass. Mr F. has omitted to mention that it works much better when *kept wet*. In a subsequent section he advises the use of wet sand paper in cleansing copper. The annealing of sealed and bent tubes, so important for the condensation of gases, we commonly perform on a sand bath, leaving them there until the fire goes out. Radiant caloric, according to Dr HARE, will not break even a very thick glass tube, and therefore he bends or closes such tubes by bringing them near to a very fierce anthracite fire. In blowing glass bulbs our glass workers use gum-elastic bags, by which more force is obtained and no moisture introduced.

The remainder of this able work consists of rules for cleansing; general rules for young experimenters; uses of equivalents, and Wollaston's scale; uses of miscellaneous articles; magnetism; and a course of inductive and instructive practices for the practical advancement of the student. In all of these we perceive the mind of the master-artist, one thoroughly acquainted with both the theory and practice of his hermetic science, and discoursing of it as solicitous for its honour and anxious for its promotion. Withal there is throughout the modesty of one who has learned enough to be able to perceive the vast field of science yet before him, and to set the less value on what has been done, by knowing how much yet remains to be done. With more pretension, the volume before us might have encountered censure for several faults of composition, and for some defects of arrangement and combination. But such faults are not numerous nor offensive, and must be pardoned in a work abounding in excellence and full of usefulness. We felt also, as Americans, disposed at the outset to complain of the John-Bullism of Mr FARADAY, relative to ourselves and the chemists of continental Europe; but as he is in this regard much more liberal than the great body of his scientific countrymen, we are willing to attribute the prejudice under which he still labours to that blemish of our common nature which, while it wont

> "The giftie gie us,
> To see oursels as ithers see us,"

by a parity of delusion, denies us the power to value aright the qualities of strangers and aliens.

Article XVI.—*Traité de la Maladie Scrophuleuse, &c.* Par C. G. Hufeland.

(Concluded from p. 126.)

Our readers will find by reference to the preceding number of this Journal, that our review stopped at chapter third, in which the learned and accomplished Hufeland proposes the doctrine, that scrofula has its primitive seat in the solids, and that it consists in the two-fold condition of debility and a conjoined state of irritation of the lymphatic tissues, together with a peculiar alteration of the lymph itself. We offered, formerly, some remarks on his idea of debility and irritation, and shall take up the volume in this place with his remarks on the condition of the lymph in scrofula.

M. Hufeland remarks, that much error on the subject of this affection has arisen from the circumstance, that we have been heretofore unwilling to look for the occasional causes, except in the solids themselves, and have thus made no account of the fluids, whose influence must, nevertheless, be regarded as immense in some cases; for no just view can be taken of any system of organs, without attending to the *reciprocal* actions of the solids on the fluids, and of the fluids on the solids. Now, if this rule is of general application, we ought, à priori, to conform to it in our study of a system, which draws the largest proportion of its materials from the digestive tube, and from the exterior of the body; for these materials are far from having undergone that degree of elaboration which renders them fit for being identified with the living tissues. These fluids are the elements of the solids; the natural stimulants, without the application of which the irritability of the vessels could never be excited into action. The fluids are, therefore, the *mobiles* of the functions, each one modified by its peculiar nature. We are bound to take into every pathological consideration, or proposition, not only the mass, but the *quality* of the fluids. If, says the author, the fluids exert so great an influence on the organs, need we be surprised at the changes of the lymphatic system effected by the lymph?

In the modifications which the lymph undergoes, it may become too thick and viscous; too thin and watery; too irritating on account of a superabundance of acid, saline, or alkaline principles; all of which may depend on the quality of the ingesta, the state

of the digestive, cutaneous and pulmonary organs, the qualities of the atmosphere, the state of the secretions, &c. &c. and finally—

"That affection of the lymphatic system that constitutes the scrofulous disease, alters the quality of the lymph (this is what is denominated *acrimony* of the lymph, *scrofulous virus*)". 55.

Dr HUFELAND's fourth chapter treats of the "formation of the scrofulous acrimony."

"If," says he, "it be true, as there is no reason to doubt, that all the fluids of the human body are specific stimuli, that is to say, if they possess the faculty of producing an impression *relative* to the sensibility of the vessels which contain them, it will doubtless be admitted, that this faculty may either be increased or diminished. Its increase then is what I call *acrimony*. In other words, whenever any fluid is more stimulating than it should naturally be, there exists an acrimony of that fluid (*acrimonia, dyscrasia acris*).

"Hence it follows, that there is no absolute acrimony; every thing depends on the relation that exists between the sensibility of the solids and the impression made by the fluids. Thus, what is acrimony to one person is not so to another, and, even in the same individual, such an humour is irritating to this organ, and not at all so to that—a phenomenon which has its analogue in the action of tartar emetic, so stimulating to the stomach, while it is not at all so to the tongue." 57.

Such is his view of acrimony; a view so plainly deduced from facts and observations, that the most ultra solidist of the age cannot refuse to admit, at least, that it is philosophical. It may be said, that this reasoning is mere assertion; but if medicine is a body of doctrines, as contra-distinguished from what has been more rigorously called science, Dr HUFELAND's humoralism, so logically inferred from all the foregoing, is entitled to the praise of being, at least, good doctrine. Pathology is not science; it is only doctrine. He is the greatest dogmatist who presses his proposition in the very teeth of reason and argument.

Our limits will not permit us to follow the learned author in his disquisition on the nature of the scrofulous acrimony. We can only sum up the several heads of its "effects:" and 1. It irritates the lymphatic, nervous and vascular system. 2. The lymph acquires a tendency to viscosity, or to thickening. 3. It loses its nutritive qualities. 4. It acquires a tendency to acidity. 5. At its greatest intensity it is associated with a putrid condition. And 6. At this period, the scrofulous disease may become contagious. It must be understood, however, that the author only considers the affection

as capable of becoming contagious in this, its most exquisite form. The opinion of its contagiousness is supported in a foot note of the French translation, by adducing, as authority, PUJOL, LALOUETTE, BORDEU and BAUMES, while, on the other hand, numerous experiments are cited of inoculations with the virus which produced no specific result—experiments which ought to be considered as decisive of the question, even if the question had required the aid of such experiments, which is doubtful.

The second section of the work is entitled, Description of the Scrofulous Disease; and for greater facility in laying down the diagnostics, he divides it into three stages. In the first it is still concealed, but the disposition to it exists. In the second, it manifests itself by all its characteristic symptoms. In the third, it tends to disorganization. We can spare only enough space here to say, that setting out with the first division, he enumerates successively, with a greater or lesser number of remarks on each head, the features of the malady under the heads of diathesis; causes; external facies of the individual; irregular development of the organs; different kinds of complaints even commonly thought insignificant, but which are connected with the strumous diathesis; change of the digestive forces; and lastly, scrofulous fever. Of the last mentioned, he says, he is convinced that most of the fevers of children, denominated gastric, slow, mesenteric, and fever of dentition, are only precursory symptoms of the scrofulous diathesis, or the certain signs of its presence, even though all its peculiar symptoms should be as yet not present. He proposes, therefore, to call it scrofulous fever. We have it not in our power to transfer his description of this fever to our pages, because it cannot be condensed, and the whole account is too long.

The symptoms of the scrofulous disease in the second degree are described in a masterly manner. In this stage the vital forces are not alone affected, but there are lesions of the organs as well as functional derangements.

1. The first and most common symptom is swelling of the glands, particularly those of the neck—they are moveable, elastic, colourless and not painful. They gradually become immoveable; many glands being involved a considerable tumour is formed; and lastly, the lymphatics leading to them partake of the diseased condition, and can be felt hard and cord like.

The peculiar character of these scrofulous tumours, and that

which with a little experience serves to distinguish them from all others, is a certain degree of elasticity familiarly known to practitioners, but not capable of being described. He also observes, that although these tumours may remain in an indolent state for several years, yet in their commencement their *existence* is very *inconstant;* they appear and disappear by turns.

As the scrofulous bias increases, the glandular tumours grow harder and less moveable, they become red, and a deep seated pain is felt in the interior of the gland, suppuration is established, the product of which differs, as is well known, from that of the phlegmonous inflammation. We shall not follow our author in his account of the purulent discharges in these cases.

2. Cutaneous eruptions of various kinds, particularly on the head. These he regards as in some measure critical, serving as it were to conduct or lead the disease from the interior to the exterior surface of the body.

3. Inflammations of organs that contain many glands,—as ophthalmies; that essentially located in the glands of Meibomius, called scrofulous ophthalmia; hordeolum and fistula lachrymalis, also effects of the strumous constitution; and ulceration of the free edge of the tarsus, which is so characteristic of this habit, that it may be confidently asserted to exist in those children who labour under this sort of inflammation.

4. Mucous discharges,—as blenorrhea oculorum et aurium.

5. Tension and hardness of the abdomen.

6. Scrofulous ulcers.

7. Lymphatic tumours. And

8. Goitre.

These all are marks of the scrofulous disease, and with them terminates his account of the second stage or degree. We must omit any notice of what he has observed on the third stage, or disorganizing degree, in order to take up our analysis at p. 119, where he treats of the progress and prognosis of the scrofulous disease.

"Of all the infirmities that afflict the human species, this is certainly one of the most protracted (un des plus *lentes*) and difficult to cure. It belongs to the class of constitutional diseases—those diseases which are so identified with the constitution, that it must be wholly regenerated in order to destroy its native taint.

"Nature is more capable than art of effecting this grand revolution. It is not uncommon to see the strumous habit lose gradually some of its intenseness, and then be entirely effaced by the influence of age. It is in this way that the natu-

ral changes effected in the human organization by the advance in years causes the scrofulous vice to appear and disappear by turns.

"Viewed within its ordinary limits and in its primitive seat, scrofula is a disease of childhood, and one of the commonest diseases of that period of existence. It often comes on in the first year of age, and even earlier—an incontestable proof that it is hereditary. Commonly it affects the mesentery in children two years old, and attacks the lungs at puberty. It very frequently appears too in the course of the third or fourth year, sometimes even in the seventh, examples of which I have witnessed; but it is very rare to see its first attack made at the age of puberty.

"The scrofulous disease commonly disappears before the seventh year; in some cases, however, it persists until the age of puberty and then vanishes entirely. Nevertheless, on some occasions, it strikes root so deeply that it accompanies the individual to the grave, always assuming during its progress some new form.

"But, the march of this affection is not always steady. On the contrary, intermissions are very frequent; they last sometimes for several years, so that the patient believes himself cured, when suddenly the disease returns either under its old or some new aspect. It has been known to recur, invested with all its peculiar characters, in women arrived at their climacteric,—that is to say, after having been suspended during twenty years of the prime of life and sexual vigour. At this epoch scirrhus and cancer, tubercular phthisis and mesenteric tabes, are not, as might be supposed, accidental affections, but the tardy results of the scrofulous diathesis which seems to arise as if from a long repose.

"It is proper here to recollect the division which was made of scrofula, according as it was determined to the interior or exterior organs of the body. In some cases, and principally at the commencement, it possesses a manifest tendency towards the periphery of the body; witness the glandular engorgements, the cutaneous diseases, the ulcers, ophthalmias, &c. &c. As long as these symptoms last, the internal functions are freely exercised; but if they disappear, either spontaneously or in consequence of inconsiderate applications, while the scrofulous diathesis still exists, those organs which are placed in the interior of the body become affected in turn, and then we have tuberculous consumption, marasmus, hydrocephalus, ascites, nervous diseases, &c. On the other hand, all these affections vanish on the sole ground of the reappearance of the external symptoms. On this reciprocal succession of exterior and interior effects of the scrofulous disease, is based one of the most essential principles of its treatment. Such also is the foundation of this common and well known truth, of which my practice has furnished a thousand proofs, viz. that those children who have early had tinea, crusta lactea, or other analogous affections, are commonly exempt from the internal ravages of the scrofulous vice, and subsequently enjoy a good state of health."

Section third commences at p. 124. It consists of an account of the treatment, which must rest on the following indications.

1. To take away the causes of the scrofulous diathesis.
2. To remove acids and saburra in the primæ viæ, by keeping the

bowels open, and then prepare the way for the antiscrofulous remedies, by absorbents, resolvents, anthelmintics, &c.

3. To raise the tone of the constitution, and especially that of the lymphatics. In fulfilling this indication, it must never be forgotten, that the resources of hygieine are not inferior to those of pharmacy. Good diet and wholesome air are not less useful than bitters and astringents.

4. To regulate and calm the functions of the lymphatic system, by diminishing the irritation by which it suffers. The means here consist of revulsives, warm baths, antimonials, mercurials, cicuta, dulcamara, belladonna, opium, baryta, lime and guaiacum, also the tonics.

5. To furnish good aliments, rich in nutritive principles, a pure dry air, light, and sunshine.

6. To correct the immediate effects of the scrofulous vice, such as engorgements of the glands, acrimony of the lymph, &c.

Dr Hufeland directs us, after having removed the patient from the reach of the morbific causes, and having prepared in a proper manner the *primæ viæ*, to proceed to the curative means. These are the antiscrofulous remedies more properly so called, as they exert a special power on the lymphatic system, as well as on the lymph itself: he names among these, mercury, antimony, and the resolvent plants, such as tussilago (colts-foot), beccabunga (brooklime), and taraxacum (dandelion). Care should be taken to add, on proper occasions, some stimulants of the digestive tube, in order more surely to obtain the good effects of the medicines.

When by these means we have obtained a resolution of the glandular tumours, cicatrized the ulcers, and removed or decidedly diminished the symptoms of scrofulous inflammation, we are to pass on to the employment of tonics. The only one to which we can recur at an early period is the acorn coffee, of which more will be said hereafter.

Great attention should be given to ascertain the presence of irritation, whether general or local; and antiphlogistic methods must be employed in combating it if it exists. It is often necessary (as in the more violent ophthalmias) to order local bleedings—here tonic medicines would do great mischief. These cases are not, however, frequent; for in the large majority a condition of such decided debility exists, that we may safely prescribe corroborants from the commencement, especially in rachitism, where martial are not less

efficacious than mercurial preparations in other forms of scrofula.

Dr HUFELAND candidly avows, that in those cases whose roots are struck deep into the constitution, we can expect a radical cure from time alone. The disappearance of a gland or a cutaneous eruption, pronounced a cure, is not a cure; the principles of the disease still exist, and sooner or later it will manifest itself by symptoms not to be misunderstood. To prevent this return, reference must occasionally be had to the preparations of mercury and antimony, until the symptoms are utterly or nearly extinct. In the interval tonics, combined with resolvents, must be exhibited: and if every thing proceeds favourably, suspend the use of medicines for a month; nevertheless, the dietetic rules, the baths, and acorn coffee, are always indicated. Proceeding in this manner, we may hope to destroy the scrofulous diathesis in about one year.

Dr H. next proceeds to inculcate, at considerable length, the importance of keeping always in view the tendency of exterior scrofula to retreat to the interior organs, and, with that view, he urges the propriety of exciting and keeping at the surface several of those forms of disease which in some instances are real critical *efforts*, capable of judging the scrofulous disease fully, and completely terminating it. These general remarks on the treatment extend from p. 124 to p. 137, and then commences chapter first of section third.

The first chapter comprises rules and observations concerning the dietetic treatment, as aliments, air, exercise, frictions, cleanliness, and warm baths. Of these we will not cite any more than the above titles.

Chapter second, p. 150, is entitled Pharmaceutic Treatment. He lays down eight rules, of which the three first might be fully expressed in the following formula. 1. Have patience, 2. and nature will sometimes cure your patient, 3. especially in the spring of the year. 4. The fourth is, do not be deceived by the suppression of scrofulous tumours. They are symptoms only of a general affection, wherefore do not rely on topicals alone. 5. Do not believe in any *specific* against scrofula; it is a disease of the whole constitution and recognizes many causes, therefore there is no specific. 6. Pay great attention to the complications—get rid of them first if possible, and then you have only the principal disease to combat; but, the complications will often modify or prevent the effects of your remedies. 7. Vary your curative means from time to time, to avoid the inconveniences which may arise from habit. 8. Never

forget that the lymphatic system is the primitive seat of the scrofulous diathesis, and search carefully for all the means that are capable of promoting absorption.

Next follows the enumeration of the medicines, which are all dilated on more or less fully, and the account of which extends from p. 155 to p. 294. Now, it is manifest that we cannot give even an abstract of observations made on so many pages, and the more particularly as his remarks are in general characterized by briefness and conciseness. We will present our readers, however, with a catalogue of the heads he treats of, formally. They are, emetics, purgatives and digestives, antimony, mercury, muriate of baryta, muriate of lime, cinchona, and other astringent tonics, acorn coffee, iron and its preparations, aromatic and stimulating tonics, narcotics, cicuta, opium, henbane, belladonna, bittersweet, digitalis, assafœtida, burnt sponge, alkalies, absorbents, lime water, soap, guaiacum, colts-foot, juices of plants, herbs, bitter extracts, and inspissated juices of herbs, mineral and sea waters, injections, excutories, baths. Then come topical means, and local treatment of the symptoms.

We will now proceed to select portions of his observations on the various medicines above detailed. And in the first place, HUFELAND commonly commences the treatment, by the exhibition of an emetic, and recurs from time to time to their employment, even if there be not present any very manifest signs of gastric disorder, because, he thinks, they communicate a favourable shock (*secousse*) to the lymphatic system. He prefers the following formula in most cases. One or two grains of emetic tartar, with from twelve to twenty grains of ipecacuanha, in half an ounce of oxymel of squill, and an ounce and a half of water. The patient takes a table spoonful every quarter hour, till vomiting comes on.

Purgatives. Under this head, he *denounces the neutral salts*, and commends the irritating articles, and of these he gives the preference to *jalap*, which removes often the tumid state of the belly, the depraved digestions, and such other symptoms in the chylopoietic organs as had been in vain attacked with the neutral salts, &c. He often perseveres in the employment of purgative medicines for several weeks. Aloes is recommended, particularly in the second stage of scrofula, and the author lays down, in several pages, the motives and means of its administration, illustrated by a case in detail, with allusion to others. Rhubarb, as might have

been expected, receives a full share of his attention and confidence. On the whole, a considerable stress is laid by professor HUFELAND on the employment of purgatives in scrofula; and our readers will, in viewing this subject, doubtless refer with pleasure and advantage to the effects of this class of medicines in marasmus, in morbus coxarius, and similar diseases depending upon a disordered state of the lymphatic apparatus. Perhaps the best proofs of the propriety of Dr HUFELAND's inculcations on this subject may be found in the works of HAMILTON and ABERNETHY.

Antimony. This medicine, according to the author, induces a specific irritation in the lymphatic and glandular systems, as well as in the stomach and bowels; he conceives that we should attribute its efficacy in the resolution of engorgements, and the correction of secretions, rather to the specific nature than to the intensity of degree of its impression. Its sensible operation is not a necessary condition of its usefulness, for in very small doses, and in stomachs not at all irritable, its resolvent powers are well exerted.

Antimony is never more efficacious in scrofula than in those cases where the skin performs its functions imperfectly, or where its secretions are morbid, as in eruptive forms of the affection and in ulcers. The author very properly warns us against the ill effects of a long continued use of the article, and of the dangers incurred by those who take it in states of great debility, where, if persisted in, it injures not only the tone of the constitution in general, but particularly that of the skin and the alimentary tube.

Mercury attracts a large share of the author's attention, which is devoted to this metal from p. 172 to p. 192. He praises its antiscrofulous powers very highly, as one of the most efficient as well as ancient remedies in these cases. We cannot omit the remark, that from the undenied and powerful influence of this mineral over the lymphatic, glandular, and capillary systems, a perfectly natural inference would arise as to its applicability in these cases; and yet from this very circumstance an increased watchfulness and considerateness ought always to govern its exhibition. How many cases of incipient phthisis have been nipped in the bud by the happy and timely administration of mercurials; but on the other hand, what practitioner has not seen the same disease precipitated and rapidly developed under its wanton or ignorant employment?

Muriate of Baryta. On this article, Dr HUFELAND published a separate monograph in 1794. This medicine is incapable, in our

author's opinion, notwithstanding the high estimation it has heretofore enjoyed, of eradicating the strumous habit, unless it be used in connexion with bitters; since it possesses no tonic power whatever. But in the management of the symptoms, such as glandular engorgements, dropsy, cutaneous affections, &c. it does not yield in usefulness even to mercury and antimony; it is less debilitating to the digestive organs, and may safely be continued longer than the substances just named. The muriate of baryta is specially recommended in those cases where the lymphatic system is highly irritated, or where the symptomatic affection is located in a very irritable organ, as, for example, in the eyes or in the lungs; in the last mentioned seat of the scrofulous affection, he tells us that he considers the muriate as one of the best remedies we are acquainted with, and this he derives from repeated experience of its powers. Half a drachm of the muriated baryta, dissolved in one ounce of distilled water, may be given in doses of from 10 to 50 drops, according to the age of the individual.

In diseases of the skin, the activity of the medicine is much increased by the addition of ʒiij. of emetic wine to each ounce of the solution, and by giving at the same time black sulphuret of mercury, PLUMMER's powder, cicuta, dulcamara, &c. &c. To weakly persons he administers the baryta in combination with iron; particularly, according to the following formula: Muriate of baryta and muriate of iron, each ʒss. dissolve them in distilled water and syrup of orange peel, each one ounce: 20 or 30 drops of this mixture are given every third hour. In a note of the translator, we have an account of the introduction of the baryta into practice, and a detail of various opinions as to its efficacy and the necessary precautions in its employment, which requires great care: we refer our readers to the work, p. 197.

Passing by his disquisitions on the bark, we come next to *Acorn Coffee.*

"Coffee made of acorns (says HUFELAND) is less stimulating than the cinchona; hence it possesses the advantages without the inconveniences of the astringents—the stomach bears it better. In fact it is an excellent stomachic, and its effects are not limited merely to increase of tone in the digestive organs and the rest of the constitution, but it acts as a very good resolvent in mesenteric obstructions kept up by debility. The acorn coffee also has the property of being nutritious as shewn by the *embonpoint* of those who take it. Let us thank MARX for having made it widely known. How many children in marasmus has he not saved by it?

"The infusion of acorns is one of my favourite remedies in mesenteric atrophy, incipient rachitis, glandular engorgements, asthma and cough. Continued for a long period it is one of the most powerful means in our reach for destroying even the deepest rooted scrofulous disposition.

"I have often caused it to be taken six months in succession with a success so complete, that by it alone I have dissipated mesenteric obstructions of the worst character."

The acorns of the quercus robur are employed,—each acorn ought to be cut into four pieces, torrefied, reduced to powder and prepared as coffee; sometimes a little coffee is added to them. The translator in his note alludes to the well known and remarkable fineness of fibre in pork where the animals had been sometimes fed on acorns. Our southern friends, whose fine hams are certainly not at all inferior to those of Westphalia, are well aware of the importance of what is called a good *mast* year in this regard.

Narcotics. The direct and essential effect of the narcotic is to diminish sensibility, and in a degree irritability also; but inasmuch as the author regards scrofula as a combination of irritation and debility, he remarks very consistently with his theory, that narcotics may answer very well in fulfilling the former irritation, while they are less adapted to the latter.

But in cases where the lymphatic irritation is primitive, or in other words where it is not the consequence of debility, this class of medicines is worthy of our highest confidence. Hence it is manifest that they will be particularly recommended in the pseudo-scrofulas. As for example in the glandular tumours that depend on a syphilitic taint, or measles, or any metastasis,—in fact, wherever debility does not form the principle of the morbid condition.

It follows, from all his observations, that the narcotic medicines are incapable of destroying the scrofulous diathesis, but they may contribute thereto (*a*) by repressing the vicious action of the lymphatic system, (*b*) by diminishing the natural disposition of that system to a state of irritation, (*c*) by modifying the too irritating action of tonics. Whenever therefore they are administered, they should be combined with tonics in order to protect the digestive organs against their debilitating operation.

Externally applied in the proper cases, they are of signal efficacy in removing scrofulous tumours, ulcers, &c. &c.

Among various articles of this class whose virtues and uses he signalizes at more or less pains and extent, he speaks of the *Dulcamara* as a precious remedy. It has the double property of favour-

ing the resolution of engorgements, and of exciting the secretions; its narcotic effects are very slight except it be given in a very large dose. It has this special merit that it does not disturb digestion, but rather promotes than weakens the appetite.

At p. 246 he speaks of *Digitalis purpurea*, which exercises a powerful influence on the lymphatic system, facilitating absorption, augmenting the secretions from the kidneys, and sometimes even those of the salivary glands; hence, he thinks, we ought to regard it as one of the most heroic antiscrofulous remedies. But he warns us against the circumstances which might follow the prolonged use of the plant; and such of our readers as may design to employ it in large amount, we, in addition to the above caution of HUFELAND, would respectfully refer again to the work of HAMILTON on this plant. Our author thinks that, when cautiously superintended, it is very important; that we may expect from it, especially if given in combination with mercurials, the resolution of engorged glands; the dissipation of lymphatic effusions and scrofulous dropsies; and beneficial results in asthma and scrofulous cough; while the juice and ointments or fomentations made with the herb are usefully applied to the tumours externally. In remarking upon the inconveniences occasionally resulting from the employment of this plant, Dr H. attributes them to the excess of the doses. Observation has taught me, says the author, that if it does not act in a small dose (two grains for an adult) it will not do better in a large one. He also recommends the suspending of the remedy every fortnight.

Burnt sponge attracts also a large share of the professor's attention and regard. As the active constituent of this article is now procured in a pure and separated state, it is probable that such persons as desire the advantages heretofore yielded by burnt sponge will resort to iodine and its various preparations.

In regard to the treatment of engorged glands, indurations, tumours, &c. which are to be treated mostly through the constitution, Dr H. nevertheless gives us ample instructions on the score of *topicals;* in regard to which the first great rule is as follows. We ought as much as possible to favour the resolution, and not the suppuration of the tumours. If then you have charge of an engorgement, which begins to grow red and painful, take good heed not to cover it with irritating fomentations to hasten its maturation. You would augment the atony which is the fundamental principle of the malady. You ought, on the other hand, to favour the resorption

of the matter of engorgement by covering it with resolvents, and in this you can generally succeed, because the scrofulous inflammation is always passive and chronic. If a focus of suppuration is established, it is only after a long lapse of time; and here the irritating topicals are far preferable to the common antiphlogistics. The true antiphlogistics in this case are bark, mercury, cold water, cicuta, and the corroborants. Among the best means of promoting resolutions in scrofulous engorgements are,

1. *Volatile salts.* Common volatile liniment (especially if we use camphorated oil instead of ol. olivar. and let the ammonia constitute one-third of the mixture) is very energetic, when the frictions are repeated every two hours, and the parts are kept enveloped in a clean cloth.

HUFELAND gives the formula of an ointment from which he has derived the greatest advantages, and as we, after his directions, have employed it with very satisfactory results, we shall copy it. Take ointment of althæa ʒj. beef gall, Venice soap, āā ʒiij. ol. petrol. ʒij. carb. ammon. ʒss. camphor ʒj. Mix and make an ointment, and rub a tea spoonful of it into the tumour every third hour. Not only does he commend its efficacy in external swellings, but even in mesenteric enlargements, obstructions of the liver, &c. &c.

2. Ointment of the juice of digitalis.

3. Mercurial ointment with the former.

4. Ol. petrolei.

5. Camphor—triturate one ounce of camphor with three drachms of aq. ammon. pur. and add half an ounce of oil of olives.

6. Opium, cicuta, belladonna, hyosciamus, whether in the shape of juices, fresh leaves, lotions, extracts or powders.

7. Gum ammoniac, galbanum, assafœtida, especially useful when dissolved in oxymel of squills.

8. Beef's gall.

9. Squill. An old physician gave HUFELAND the following as a secret, and "I recommend it," says our author, "expressly." Take roots of squills, any quantity, cut them up and boil them in caustic ley to the consistence of a mucilage, strain it off with pressure and add a little honey and enough basilicon to make a thick ointment. It resolves the most obstinate scrofulous glands and lymphatic tumours without suppuration.

We will here close our analysis of the treatise on scrofula, with the remark, that the book itself ought to be in the hands of the

profession, and when that shall be the case, many of our scrofulous patients will be kept out of the hands of the quacks.

ARTICLE XVII.—*De l'Influence des Agens Physiques sur la Vie.* Par W. F. EDWARDS, D.M. Membre associé de l'Académie Royale de Médecine de Paris; Membre de la Société Philomathique, de la Société de Médecine de Dublin, &c. A Paris, chez Crochard, Libraire, 1824, pp. 654, 8vo.

Of the Influence of Physical Agents on Life. By W. F. EDWARDS, M.D. &c. Paris 1824.

Our readers may readily imagine the difficulty which we experience in our restricted limits of making them acquainted with the medical literature of the day. Conceding even that our time was entirely at their disposal, as our best wishes are for their instruction and laudable amusement, we should still find it impossible to present to them the analysis of good works with any thing like the regularity with which these latter appear. Calls of a passing interest are often made on us which must be gratified, and the nearest occasionally take the place of the most valuable productions. We venture these remarks in explanation of the time that must often, as in the case before us, elapse between the appearance of a book and a full review of it in our Journal: we ought to add, in justice to ourselves, another unavoidable cause of delay,—the want of room: with our present efficient organization we believe it would be no difficult matter for us to occupy all the pages of a Quarterly in medical reviews. Of two works now on our table both of them abounding in novelty of experiment and deep research we have selected that of Dr EDWARDS for notice on the present occasion.

The author is a native of Jamaica; who went to France during the revolution. At Bruges, where the family took up its residence, he became a teacher of the dead languages and of the natural sciences; and subsequently, at Paris, directed his attention to the study of medicine, in the anatomical and physiological and pathological departments of which he has displayed great zeal and talent. In con-

junction with M. GUALTIER he obtained in 1811 the prize proposed by the Medical Society of Besançon for the best essay on the structure, functions and morbid condition of the skin. In 1813 he read at the Institute a memoir on the anatomy of the eye, in which he described with unusual minuteness the membrane containing the aqueous humour; and represented it as lining the whole anterior chamber. He treated also of the structure of the iris, which he considers as composed of four laminæ. He obtained his degree of Doctor in 1815 from the Medical Faculty of Paris, choosing for his inaugural essay the subject of iritis and the black cataract. His chemical experiments, performed by him in common with M. CHEVILLOT on the mineral cameleon, have been printed in the Transactions of the Royal Academy of Sciences, and are inserted in the Annales de la Chimie et de Physique.

The work before us is a digested summary of various memoirs presented by the author to the society above mentioned, which on two occasions awarded him divided prizes. In 1819 he presented his essays "On the Influence of Physical Agents on the Vertebral Animals," which, in conjunction with the work of M. SERRES on Osteogony, obtained the prize. In 1820 Dr EDWARDS received the like honour for his experiments entitled, "On the Respiration of Warm Blooded Animals, and the Influence of the Seasons on the Animal Economy," in company with Dr DUTROCHET for his work on the "Intimate Structure of Vegetables."

Under the head of physical agents Dr EDWARDS classes, 1. air, in regard to its quantity, movement, repose, density and rarefaction; 2. water, in its liquid state and as vapour; 3. temperature, in its modifications of degree and duration; 4. light; 5. electricity. Though all of these are indispensable to the support of life, yet as the want of air is the most urgent, the author begins with this agent. In describing its effects positively and negatively, he selects for the first experiments the family of animals called *Batrachia* including of course the toad, frog, salamander and the like.

The temperature of the mammifera and birds being the physiological character which most distinguishes them from reptiles and fishes, he begins by it the study of warm blooded animals, and regarding the evolution of heat as a function, whatever may be its cause or organs, he endeavours to determine the circumstances under which it varies according to the different conditions, relative on one side to organization, and on the other to the action of external agents.

The intimate connexion between these agents and the nervous system, the organs of respiration and circulation, as well as those of transpiration and absorption, has led Dr Edwards to an examination of a great number of facts applicable to hygeia and pathology.

The work is divided into four parts.

The first part consists of six chapters, in which the phenomena of asphyxia; the influence of temperature; the influence of the air contained in water; the vivifying power of the atmosphere; the influence of the atmosphere on transpiration; absorption and transpiration in water, are each in succession discussed with a reference to the changes thereby induced in the batrachia.

In the first chapter, on the *phenomena of asphyxia*, the author proceeds to inquire into the part performed by the lungs, and whether the mere cessation of the functions of these latter explains the suspended movements and death of the body generally: in other words, whether immersion of animals in media other than atmospheric air produces death sooner or later, or is marked by more varied phenomena, than would ensue on the mere suspension of respiration by withholding its peculiar stimulus. Reptiles from their amphibious nature, and peculiar tenacity of life after different degrees of mutilation, put it in our power to carry on investigations on this subject to a very great extent. We all know how long some of them will live after excision of the heart, and of course after suspension of the circulation properly so called; for what blood remains is not in the circulatory vessels, but forms part of the organs themselves. With the destruction of the circulation is necessarily associated the loss of the respiration. There remains then merely the action of the nervous and muscular systems, which are not susceptible of separation, since we can only judge of the action of the nerves by the movements performed by the muscles; at least this is the case in the lower animals. Thus reduced to the greatest simplicity of function, they guide us to a solution of the question.

If, for example, after having extirpated the heart of reptiles, taking care also to excise the bulb of the aorta, we place an equal number in the atmosphere, and in water deprived of air, the difference in the lives of the two divisions, whatever it may be, will indicate the respective influence of these media on the nervous and muscular systems, independent of their influence over the circulation and respiration. Dr Edwards performed experiments of this nature on

salamanders, frogs and toads. Of ten salamanders, with hearts and aortal bulbs excised, five were left in atmospheric air, and an equal number in water deprived of air, or non-aerated. The former lived during a period averaging from twenty-four to twenty-nine hours; the latter survived their immersion but seven or eight hours. Such marked differences can only be explained by the difference of the media; and shew that the air of the atmosphere is much better fitted than water to keep up the action of the nervous system of these animals; and that it has a vivifying influence on the organization distinct from that exercised by means of the circulation and respiration. Similar experiments performed on frogs and toads gave similar results. The following is still more illustrative of the different effects of the two media. If a frog, from which the heart has been removed, be immersed in non-aerated water until all movement ceases, and after pinching it no sign of life is given, we then restore it to the open air, it soon becomes reanimated and sets itself in motion. The reverse is equally evident and prompt. If an animal thus restored be replunged in the water, it loses every sign of life immediately. Thus we may go on alternately reviving and extinguishing sensibility and motion; and shew that while the air exerts a directly positive vivifying effect, independent of its agency through the circulation and respiration, the deleterious action of non-aerated water is not less evidently demonstrated. We purposely indulge in some repetitions in order to impress on our readers this first cardinal point in the author's range of inquiries.

In the section, headed *asphyxia in water*, the first question proposed is, waving the difference of media, the influence of the circulation of black or venous blood on the nervous and muscular systems. Dr E., in this part of his work, considers asphyxia as having begun from the moment that the animal is excluded from air, reserving for another occasion an inquiry into alterations, resulting at different epochs, after such exclusion, in the colour and nature of the blood. The solution of the question now before us depends on our determining, 1. The duration of life under the sole influence of the nervous and muscular systems; 2. The duration of life from the combination of this influence with that of the circulation of the black blood. The difference of time in these two cases will shew the influence exercised over the nervous system by the general circulation removed from contact with the atmosphere. If the effects of dark or venous blood be merely negative, or, as some physiolo-

gists have taught, positively deleterious, there ought to be little or no difference of result in these two cases. The experiments of Dr Edwards shew, on the contrary, that of four frogs, two of which with their hearts excised were put under a receiver in water deprived of air by boiling, and two others whole in every respect inclosed in a similar manner, and immersed in a similar medium, the latter lived twenty hours longer than the former. Analogous results were obtained from toads and salamanders. In reply to doubts as to the conclusiveness of these experiments, owing to air remaining in the lungs, we are assured that precisely similar effects followed where the air had been carefully expelled from the organs by suitable pressure on the body of the animal, or where these had been entirely removed. The action of the blood deprived of atmospherical air is then to a certain extent favourable to the functions of the nervous and muscular systems, since it prolongs them.

In the section headed "*strangulation*" it is shewn, as we were prepared to anticipate, that the action of the nervous and muscular systems was longer sustained by the dark or venous blood in animals strangled or asphyxied in the common atmosphere, than in others submersed and drowned in water, a fact evincing the positively deleterious operation of this latter medium.

Dr Edwards has shewn, by experiments in which frogs were prevented from breathing by a bladder tied round their head, that carbonic acid is formed by the cutaneous function constituting what he calls cutaneous respiration. This serves to explain the length of time which reptiles will live in the open air, after the action of their lungs is entirely suspended as in instances already mentioned.

In speaking of animals enclosed in solid bodies, the author adverts to the many accounts of live toads found in old walls, and in rocks and coal beds, where they must have remained for a great length of time. Objections were made to the conclusions drawn from these alleged facts by supposing, that some fissure or crevice allowed the animal a communication with the atmosphere. We are next told of the experiments of De Herissant, who, in 1777, enclosed in sealed boxes of plaster three living toads, and deposited them with the Academy of Sciences. On opening the boxes eighteen months afterwards, in the presence of some of the members, two of the toads were found to be alive; the third was dead. The want of precise data on which to ground the correctness of these experiments led to a denial of their conclusiveness. Dr Edwards gives us the details

of those instituted by himself, with a view to determine this question. On the 24th of February 1817 he took five boxes of deal wood, three of which were four cubic inches in size, the other two were each four and a half feet long, four feet wide, and two and a half deep. These were half filled with mortar; a toad was then put in each, and kept down with the hand to prevent its moving from its central position,—and it was finally covered over with mortar, with which also the boxes were completely filled. They were closed and bound with cord. Dr E. next took six other boxes of pasteboard of a circular form, each three inches and a half in diameter, and two in depth. Five toads were buried in these boxes with the same precautions as before—the mortar was made smooth on the top so that no fissure should be left, and the tops were put on. Five other toads were at the same time immersed in water in order that a comparison might be instituted between the asphyxia thus produced and that which might take place in the mortar.

At midnight of this same day all the toads in the water were dead; that is about eight hours after the beginning of asphyxia. On the following day at four o' clock in the afternoon one of the boxes of pasteboard was opened, and the mortar having been carefully detached from the toad, it began to move and croak. The opening thus made in the box was again filled with fresh mortar, so as to completely bury the toad. On the fifteenth of March following, the nineteenth day from the beginning of the experiment, after reopening the box the animal was found to be alive. Similar experiments made on salamanders gave analogous results; the whole going to prove that the duration of the life of those reptiles buried in plaster was much longer than when they were immersed in water. The contrasted results obtained by exposing four frogs in a dry jug to the common air, and placing an equal number in dried sand of the temperature of the atmosphere, were as follows. They were examined every twenty-four hours, to see if they were living. On the third day all those which had been exposed to the common air were dead, except one, while all those which had been buried in sand were living, except one. These results, but in a still more remarkable degree, were obtained with salamanders. Here then it would seem, not only that the life of reptiles can be preserved for a long time by their subtraction from the air and interring them in solid bodies, but that this is a means of prolonging it. That the sand contains air is undeniable; but its containing enough for the support of life is most surprizing. We are led to believe, however, that the animals

thus circumstanced are kept alive not by the air inhaled into the lungs alone, but by that applied to the skin. The question next occurs can the porosity of the mortar be such as to allow of the transmission of air to the animals buried in it. The negative would *à priori* be sustained by every body, and yet Dr EDWARDS seems by direct pneumatic experiments to have proved that atmospherical air is supplied through the mortar to the immured animals. When boxes filled with plaster, and containing reptiles in the centre, were placed under water or mercury, so as to entirely exclude air, these animals died as soon as others immersed in the water. Twenty experiments on different species gave identical results. We leave our readers to draw their own conclusions from what is here stated. For ourselves, we cannot well understand how atmospherical air should find access to a toad incased in a solid rock, or in a wall of dry, hard and closely cemented materials, and yet the author obviously intends that we should draw this inference from his premises. The apparent paradox, of reptiles living longer in sand and mortar than in the open air, is explained by the circumstance of the cutaneous transpiration and consequent evaporation being so much greater in the latter case as soon to exhaust the animal, and cause its death. Though slower, this process goes on in the sand, and in plaster or mortar, and produces after a certain time the same result. Hence when the deal and pasteboard boxes, already mentioned, were opened in April, May and June, that is after a lapse of from six weeks to two months from the date of the enclosure of the animals, they were all found to be dead, and in a state of complete desiccation. Dr EDWARDS has ascertained that frogs and salamanders die much sooner in a vacuum than in water. In the former situation there is added to the want of air a rapid and abundant evaporation.

In chapter second, "*on the influence of temperature*," the author states the modifications, of a very important nature, which this cause will produce in the results of his former experiments. Thus he found that frogs, which would die by asphyxia under water of the temperature of 62 degrees Fahr. in the space of an hour and a half, would survive submersion in water of 40 degrees for the space of five or six hours, and in the same medium at 32 degrees, or freezing point, would not perish under seven or eight hours. Precisely opposite effects, on the measure of the vitality of these animals, resulted from their submersion in water of a more elevated tempera-

ture than 62 degrees Fahr. In water of 72 degrees Fahr. frogs perished after a space of time varying from an hour and ten minutes to thirty-five minutes. If the medium was of 90 degrees Fahr. death took place in from thirty-two to twelve minutes: if it was 107 degrees, the animal met with speedy death. It is worthy of remark, that the temperature at which frogs can no longer live in water, is nearly that natural to warm blooded animals. Death in the above experiments could not be the consequence of sudden changes in the temperature of the water: since transitions equally as abrupt in the descending scale were found to prolong the life of the animal. But the most curious fact connected with this part of the inquiry remains to be told. Under the section headed "*influence of the seasons*," the author relates, that, in the early part of November, frogs submerged in water lived twice as long as they did in the month of August in the same medium and of the same temperature. Season was here evidently the cause of the difference of results: but not season as represented by a change in the intensity of light or of electricity, or in the pressure of the atmosphere, or temperature of the air, or direction of the wind; since the animal in water was subtracted from all these influences as far as they are appreciable. The solution of the problem is found in the different conditions in which it had been, prior to the two epochs of experimenting. In the month of October frogs had been, in the open air, exposed to a temperature of a lower grade than during the summer by 13 degrees Fahr. by which diminution they acquired such additional tenacity of life, as to be able to survive twice as long submersion in water in November, as they could have done in August, or even September, in the same medium, and of the same temperature. This tenacity is increased the lower the preceding temperature of the atmosphere and water exposed to it, in which the frogs have lived, down to zero. One of them has remained alive 60 hours under common water at freezing point. No difference was found in the duration of the life of these animals submerged in water of a high temperature, whatever may have been the preceding season. Thus a frog immersed in water of 107 degrees Fahr. died just as soon in December, as another similarly circumstanced in August.

The third chapter, "*on the influence of the air contained in water*," makes us acquainted with several interesting experiments of the author going to shew, 1. that frogs will live nearly twice as

long in water with the common quantity of atmospheric air in it, as in the same fluid deprived of air by boiling; 2. that these animals can live for two months and a half in a vessel of water, provided the fluid be frequently renewed, but still contrived so as to keep them submerged, and without any communication with the atmosphere. The temperature of the water varied from zero to 52 degrees Fahr. The frog retained all the time the use of its senses and locomotive organs, and at last died in water which had formerly been renewed every day; but which, on this occasion, was allowed to remain unchanged. The ability in frogs, toads and salamanders thus to live under water of a certain temperature regularly renewed, is shewn by Dr Edwards to depend on the action of the skin on aerated water; or, in other words, they live by cutaneous respiration: the lungs being all this time quiescent in function, containing neither air nor water. In water at the temperature of 54 to 57 degrees Fahr. the batrachia ceased to live in the course of a day, whatever pains was taken to renew the fluid in which they were submerged. In a running stream of the same temperature, these animals survived for a longer time. Hence we conclude, that there are three conditions powerfully modifying the vitality of frogs under water: 1. the contained air; 2. the quantity or renewal of the water; 3. its temperature.

In the fourth chapter, entitled "*of the vivifying action of the atmosphere*," we are made acquainted with the influence of cutaneous respiration by the facts, that a frog with a ligature so tightly applied below the head as to exclude all access of air to the lungs, lived in wet sand twenty days: and of two others, from which the lungs were completely excised, a ligature being put round the pulmonary vessels so as to prevent hæmorrhage, one lived thirty-three, and the other forty days in wet sand, in air varying from 45 to 55 degrees Fahr. To determine to what extent this operation shortened the lives of these animals, Dr Edwards removed the lungs of six frogs which were then submerged in river water of the temperature of 39 degrees Fahr. At the same time, six others, entire in every respect, were similarly submerged. The greater part of these without lungs perished the first; but the only two surviving ones in the end were one of these and one with lungs. The two were found in the act of copulation; and the frog deprived of lungs laid a large number of eggs.

The loss of cutaneous respiration would seem to be worse borne

by the *batrachia* than that of the pulmonary. If the skin of a frog be removed, the animal dies in a few hours: this operation may be attended with other effects on the body generally, which renders it inconclusive. It was found, however, that when frogs were placed in a small quantity of water in a shallow glass, so that they could just reach the surface with their mouth, and obtain atmospherical air for the lungs, without any being applied to the skin, they lived during a period of three months. The small quantity of air in the water may probably be taken into account in these experiments, and serve to explain the longer duration of life, since the function of the skin would not, in such cases, be entirely quiescent. Dr EDWARDS found that tree frogs (*rainettes*) which, although they prefer being on land, yet frequent the water, did not, in experiments similar to the above, live more than three or four days. He discovered, also, that a slight modification in the experiments on the common frogs led to the like results. Thus, if submerged in a vessel of water of some depth so that they cannot rest on the bottom and breathe as they had done in small glasses, they sink after expelling the air from their lungs at the surface, to rise again after a while and go through the same process. This slight intermission of the usual respiratory effort proves fatal to them when the skin is not allowed to exert its ancillary office; and accordingly a great number of frogs thus situated died in the space of three or four days.

Of the influence of the atmosphere on transpiration.—By the term *transpiration* is of course understood that dissipation from a part of the body of exhaled vapour, or of a liquid transuding from the surface exposed to the air. We assign the name of *sweat*, as indicative of the fluid or vapour so condensed as to form drops. The contrasted effects of air at rest and air in motion, on this process, were very evident. Of frogs in equal number placed at an open window of a room, and in another window closed of the same room, the former lost at least double the quantity of fluid by transpiration given out by the latter. The amount was sometimes triple or quadruple, according to the movement of the air by wind. The process still went on, even when the air was kept in its state of greatest hygrometrical humidity: but in a dry air as could be obtained, the author found that from five to ten times as much more was transpired as in a moist atmosphere. Temperature did not exert such a powerfully modifying influence as might have been expected. The difference between 32 and 68 degrees

Fahr. was only as one to two, and between 32 and 104 degrees Fahr. as one to seven.

Of absorption and transpiration in water.—The effects on the batrachia, of exposure to air and immersion in water, are of an opposing character. The loss of weight in the first by transpiration is very promptly repaired in the second by absorption. This latter even goes on, before it attains the point of saturation, much farther than to balance the former. The animal still continuing in the water, does not, however, after having attained this point, remain of stationary weight. There ensues a true excretion of solid matters, the loss of which is at first supplied by the absorption of water; but after a time this is insufficient, without something more nutritive than the aqueous fluid be furnished to the animal. Temperature modifies these alternating, and to a certain extent opposing, processes. At the freezing point, absorption predominates greatly over the waste by excretion, whilst at 86 degrees Fahr. the loss of weight is too great to be repaired by this means.

The second part of the work is devoted to an investigation of the influence of physical agents on *fishes* and *reptiles*. The first chapter is on *tadpoles*. These, as our readers well know, are the young or the individuals in early life of the batrachia. Having both gills and lungs, they may be said to be strictly amphibious and to unite in themselves the functions both of reptiles and fishes. In virtue of their branchiæ, tadpoles can live longer under water of an elevated temperature, than the adult animal, such as frogs. They have remained vivacious and strong for a considerable period in water frequently renewed of a temperature of 77 degrees Fahr. Their metamorphosis is hastened by living in the air and by an increase of heat.

Dr Edwards found that by subjecting fish to various degrees of temperature of non-aerated water, precisely similar results were obtained as in the case of the batrachia. The duration of their life was longest at freezing point, and their death almost immediate by immersion in a heat of 104 degrees Fahr. In fish of the same species, volume constituted the only essential difference. The smallest and the youngest could least tolerate an increase of temperature.

In aerated water the effects of temperature were modified by the quantity of air in the fluid, though its specific effects were the same. Thus the duration of the life of fish will be extended by increasing

the quantity of aerated water, though the temperature remain the same. A like result obtains if, the amount of water being the same, the temperature be lowered. An increase or diminution at the same time both of the temperature and quantity of aerated water makes no difference in the duration of the life of a fish. These experiments all presume that communication between the external air and the aerated water has been carefully interrupted. Where the fluid is in contact with the atmosphere, the conditions are not materially changed—elevated temperature is steadily unfavourable and even fatal to life. Though fishes are able to respire the air contained in water, and by this means live for a certain time, yet in order to the full and continued exercise of their functions, they must from time to time come to the surface and breathe directly the atmospheric air.

In a section entitled "*life of fishes in the air*," our author inquires into the causes of the speedy death of these animals after they are taken out of the water. He attributes this to the great transpiration of the fish and its consequent loss of weight when exposed to the open air—a loss most sensibly felt by the respiratory organs. Hence if a fish be left with the head and branchiæ immersed in water and the trunk exposed to the atmosphere, it will live many days and will be found to have been somewhat augmented in weight. The converse experiment produced no such effect. The fish with the body immersed in water and its head and gills in the air, died in nine hours and twenty minutes, though it was somewhat increased in weight by absorption. It would, therefore, seem that the gain of moisture by one part of the body will not compensate for its loss by transpiration from another part. The salutary influence of the atmospherical air on fish taken out of water is evidenced in a circumstance noticed by Dr Edwards. Some thus situated soon cease to move their opercula, though they continue to live a tolerably long time; but they die, after all, sooner than those which move to the last their opercula. The quiescence of the muscles of these last mentioned parts presents a mechanical obstruction to the access of air to the gills; and it was found that the unpleasant effects of this might be prevented for a certain period by keeping the opercula apart by means of a small stick or peg.

The third chapter of the second part contains the inferences from the author's experiments on lizards, serpents and tortoises,—in other words, on the *sauria*, *ophidia* and *chelonia*. The external

envelope of all these animals receives, like that of the batrachia, the vivifying influence of the atmosphere. The pulmonary respiration alone is sufficient to maintain the life of some of them in summer, but not in others. Of the former we may instance serpents and tortoises—of the latter lizards. The reason is found in the different proportionate development of the lungs in these orders. The serpents and the tortoises, like the frogs and common toads among the batrachia, can live by pulmonary respiration alone; but lizards in summer die in a few hours if they are reduced to breathing by the lungs alone, and the vivifying action of the air on the skin be suppressed. In the same way that frogs and toads cannot live in solid envelopes under water, however aerated. So we discover that neither lizards, serpents nor tortoises can live in aerated running water, on account of the thickness of their envelope. The same laws of transpiration and effects of temperature prevail in the latter as in the former orders of animals. The greater thickness of their envelope causes lizards, serpents and tortoises to lose less by this process than the batrachia, and of course to survive longer the privation of aliment.

The third part of the work is devoted to a study of the operation of physical agents on warm blooded animals. The first chapter is "*on the heat of young animals.*" Dr Edwards first decides the question respecting the alleged more elevated temperature of young than adult warm blooded animals. He found that there was no perceptible difference in this particular between puppies and the mother when the former were at the mammæ, but that if separated from her they underwent a notable decrease of heat, so as to be within a few degrees of the surrounding atmosphere. This change takes place in the space of three or four hours, however vigorous the puppy may be, or great the quantity of food previously taken. The like phenomenon is observable in kittens and new born rabbits: nor will the difference of the external envelope explain it; for although the rabbit be born with a skin nearly naked, puppies and kittens have at this time a good covering of hair. An artificial envelope, though it retarded, did not prevent the diminution of temperature. The change only ceases to be evident after the fifteenth day from the birth of these animals. Others however of the mammifera, such as the young Guinea pig, do not exhibit these mutations. Hence we have two groupes or families in reference to animal heat. The individuals of one are born as it were cold blooded animals,

being like these liable to vary with the medium in which they are placed; the others are truly warm blooded animals. The external or physiognomical character seeming to indicate the difference between the divisions is the state of the eyes, some being born with them closed, others open. It is precisely at the time when the former begin to use their eyes that the equilibrium of animal heat is established in them as in the adult.

In experimenting on young birds, the author discovered that they also, when separated from each other and removed from the nest of the mother, underwent a great decrement of caloric. Thus, for example, when he took young sparrows of the temperature of 95 to 97 degrees Fahr. which is below that of the old birds, and exposed them separately for some time to the air at 63 degrees Fahr. they became rapidly colder, and were reduced in the course of an hour from 97 to 66 degrees Fahr. or nearly the temperature of the atmosphere. Similar results followed the exposure of young sparrows to the open air at 73 degrees Fahr. their heat was soon reduced to within two degrees of this latter. To shew that the want of plumage or cutaneous covering had no share in this phenomenon, Dr Edwards took an adult sparrow and cut its feathers close to its body, and exposed it at the same time with young ones partially plumed to air of the temperature of 64½ degrees Fahr. The former preserved unchanged its customary heat of 36 degrees Fahr. above that of the atmospherical medium—the latter lost their heat rapidly so as to be at last only two or three degrees above the same medium.

The young of some of the orders of birds possess and retain, like certain of the young of the mammifera, an elevated temperature. They are at birth, that is from the time they escape from the shell, able to run about and take nutriment: and yet they have no thick plumage, their covering is merely a kind of down. If then with the author we take a retrospective view of all the experiments on warm blooded animals, we arrive at the conclusion, "that their faculty of producing heat is at its minimum at the epoch of their birth, and that it increases successively on to adult age."

In the following chapter, "*on the heat of adult animals*," we learn that the hybernating ones produce habitually less heat than the the other mammifera; they are like the varieties of the cold blooded class readily influenced by the state of the atmosphere, and like them are gradually brought down to the level of the external cold, at which time they become torpid and lethargic. This condition

may be induced at any season by keeping them in a very cold medium. M. De Saissy succeeded in torpifying a mountain rat in the months of May and June. He had enclosed it with a little straw in a small copper box, the lid of which had a very small hole. After leaving it in an ice house for twenty-four hours, he exposed it to cold of fourteen degrees Fahr. The little animal was profoundly lethargic in eleven hours afterwards, and the temperature of its body had fallen during the experiment from ninety-five degrees Fahr. to forty-one degrees Fahr. Exposed subsequently to the atmospheric heat it revived and regained its former activity. The facility with which hybernating animals are cooled down to a low temperature was displayed in some experiments by Dr Edwards. He placed a bat, the heat of the body of which was at ninety three degrees Fahr. and that of the air sixty-one degrees Fahr., in an earthen vessel surrounded by ice and salt. A cover was so contrived as to keep up a communication between it and the outer air. Having remained in this vessel in an air of thirty-four degrees Fahr. for an hour, the temperature of the bat was reduced to fifty-seven degrees. Guinea pigs and grown birds placed in similar circumstances of a cold medium were only reduced in heat by three to five degrees. Hence we are justified in believing that the chief and characteristic peculiarity of hybernating animals consists in their not having the function of calorification as active as the other warm blooded animals.

In the third chapter "*on the influence of the seasons on the production of heat*," Dr Edwards lays down the position that no inference of any moment can be drawn from an observation of the habitual temperature of the bodies of animals. He discovered, by means of suitably performed experiments, that their inherent power of generating heat is greater in winter than in summer. In the former season, birds, such as sparrows, when exposed to air at the freezing point, undergo very little change of their animal heat: whereas in the latter, similar exposure of birds of the same species was attended with a diminution of their temperature by five degrees.

In the fourth chapter, "*on asphyxia*," we have some interesting views respecting the proportion between the habitual temperature of the animal and its endurance of submersion in water. Puppies, kittens and new born rabbits, with, as before observed, very feeble powers of generating heat, survived a half hour's immersion. But

young Guinea pigs, the temperature of which is so great from their birth, did not live more than seven minutes under water. Similar differences were discovered between young and adult birds.

The author next investigated the effects of the external temperature from freezing point, to 104 degrees Fahr. Kittens, one or two days old, were plunged in water at 32 degrees Fahr.: they ceased to exhibit any signs of life after, on an average of nine experiments, four minutes thirty-three seconds. In water at 50 degrees Fahr. they died in ten minutes twenty-three seconds. In the same fluid at 68 degrees Fahr. they survived thirty-eight minutes and forty-five seconds. At 86 degrees Fahr. a different proportion obtained, the duration of which was less—the animals lived but twenty-nine minutes. At 104 degrees Fahr. they died in ten minutes twenty-seven seconds. Water of 68 degrees Fahr. seems to be that in which submersion is best borne.

Chapter fifth contains an account of various experiments performed to elucidate the phenomena of "*respiration in youth and in adult age.*" After some observations on the necessity of pulmonary respiration to all warm blooded animals, the difference in its energy and the chemical changes which it brings about in the air introduced into the lungs, the author exhibits the differences in this function dependent on age. In experimenting on birds, he found that the young ones lived much longer than the adult in the same quantity of air. Similar inferences were drawn in regard to the mammifera. Hence the energy of respiration corresponds with that of calorification—both being greater in warm than in cold blooded animals and in the adult than in the young. This connexion is still further evinced by the experiments recorded in chapter sixth, "*on the influence of the seasons over respiration.*" It was found that birds, for example, uniformly consumed oxygen with more rapidity in winter than in summer. They cease to breathe in a given quantity of air sooner in the former than the latter season—whether the carbonic acid was allowed to remain in proportion as it was formed, or was absorbed by caustic potash. In both cases the temperature of the air was nearly the same.

In the seventh chapter, "*on transpiration,*" the author shews that transpiration goes on gradually decreasing in the mammifera and in birds after two or three hours, when they are exposed to air of a medium temperature, and kept without any nutriment during the period of the experiment. This process is much more active

in a dry than a humid atmosphere, and in a current of air than when it is calm.

The fourth part of the work is devoted to an examination of the relations which man and the vertebral animals have with physical agents. Chapter first is on "*the modifications of heat in man from birth to adult age.*" The same laws govern here as in the classes of animals already spoken of. The medium heat of twenty adult persons was 97 degrees Fahr.: the medium heat of ten healthy infants, varying from one to two days in age, was 95 degrees Fahr. This difference would hardly justify any general inference, were it not in perfect accord with the results of the experiments made on the young of the mammifera. In an infant born before its time or at seven months, the temperature was 89½ degrees Fahr. a fact corroborative of the accuracy of the principles already laid down.

The second chapter is headed, "*on the influence of cold on the mortality at different ages.*" Young birds, kittens, puppies lose their own heat and die by exposure to an atmosphere of reduced temperature, or even to one which is about equivalent to the mean heat of the year. But the young of animals will survive a temporary exposure to cold which would kill the adult ones, with the understanding that both have been removed from the cold to a warmer medium. This leads us to the next chapter on the "*temporary application of cold*," in which we are told that animals chilled and warmed at different times, though they recover their first temperature, yet they are longer in doing so:—in other words, the faculty in them of evolving caloric, of course the power of resisting fresh cold, is diminished. A young man who, during a severe winter when the river Seine was frozen, wished to cross, broke through the ice and fell into the water. He extricated himself from his dangerous situation and escaped without his health suffering; but for three days afterwards he was tormented with an unremitted sensation of cold.

The counterpart of all this holds in regard to heat. The application of a high degree of heat favours its subsequent evolution in the body thus exposed. Hence the best means of supporting great cold is to be previously subjected to high heat—a theory this, the practice of which is exemplified in the inhabitants of the north of Europe, who rush out from their hot and vapour baths and roll themselves in the snow. We can understand on the same grounds,

how the troops from Italy and the south of France suffered less by cold in the Russian campaign, than those from Belgium and northern Germany.

"*The influence of the seasons on the production of heat*" is discussed in the next chapter. The leading position laid down by the author is, that with the gradual diminution of the external or atmospherical temperature man and most of the warm blooded animals acquire an increased energy of evolving caloric in their bodies. This power attains its maximum in winter and declines with the increase and duration of the external heat. The temperature of the body may then be regarded as depending on the heat produced on it and that communicated from without. There may be varieties in these without the heat of the body being altered. A gradual succession of seasons seems necessary to enable the animal economy to accommodate itself to the external temperature. If, for example, a sudden degree of cold come on in summer, we are taken as it were unawares, since our power of evolving caloric is then at its minimum. In this respect we differ in summer from ourselves in winter, in the same manner, though in less degree, that the young of warm blooded animals differ from the adult ones.

In the sixth chapter, "*on asphyxia*," we have an account of the external phenomena in animals submerged in water and the length of time they can remain in this state without an entire extinction of life. A division has already been made of the young of the mammifera in reference to their powers of endurance when thus circumstanced. This is into, 1. those which produce so little heat that they cannot be said to have a peculiar temperature; 2. those which evolve enough to preserve an elevated temperature when the air is not too cold. The first live much the longest time in a state of asphyxia produced by submersion. The evidences of persisting vitality are of a two-fold nature—voluntary movements and involuntary ones. Thus puppies, kittens, young rabbits, &c. cease to exhibit voluntary movements and seem to lose all sense after three or four minutes, though they survive submersion for half an hour. Among the involuntary movements an external one is observable, viz. the half opening of the mouth or gasping at intervals of one or two minutes. Some puppies have exhibited signs of life after undergoing submersion of fifty-four minutes. If these animals be left in the water until they cease to exhibit any movement either of themselves or by pinching them, they cannot be restored on exposure

to the air. Dr Edwards has often made inquiries of the best divers at the schools of natation in Paris, how long they could remain under water: and he was informed that the extent of time was three minutes.

The influence of heat, whether internal or inherent, and external or adventitious, is sensibly felt in asphyxia. The cold blooded animals, such as the batrachia, immersed in water of 104 degrees Fahr. are in precisely the same state as regards their speedy death with warm blooded animals similarly placed or submerged in water of a common or low temperature. But if we take that variety of the warm blooded class called hybernating, we have the same conditions for protracted life in them, deprived of air, as in the reptiles, viz. 1. a great reduction of their temperature; 2. ability to live long in this state exposed to cold air. Let these same animals, bats for instance, be plunged in water at 68 degrees Fahr. in the summer season, and they die in four or five minutes. Torpid and lethargic during the winter, they would under similar exposure retain life for a great length of time. To shew how completely animals in a state of hybernation bear the deprivation of air, we need but refer to an experiment of Spallanzani. This celebrated naturalist placed a mountain rat completely torpid in a receiver at the temperature of 54 degrees Fahr. containing carbonic acid. It gave no signs of uneasiness during the whole experiment which was protracted for four hours.

Dr Edwards next proposes the question whether in warm blooded animals deprived of the access of air and of course prevented from forming arterial or red blood, the venous or dark blood contributes to the support of life. The affirmative was shewn to be the case in reptiles. It holds also in respect to the young of the animals just mentioned. Kittens with their hearts excised and submerged in water lived but a quarter of an hour, others with their organs entire and plunged into water of the same temperature gave signs of life for about half an hour. Apparent death or suspended animation follows so soon, in adult warm blooded animals, their privation of air, that it is difficult to appreciate the influence of venous blood on their organs.

The direct operation of temperature on the nervous system of animals is exhibited in experiments performed on frogs and kittens. Of the first with their hearts excised—four in water of sixty-eight deg. Fahr. lived on an average one hour three minutes, and four in

the same fluid at freezing point lived eight hours fifty-five minutes. Of three kittens with their hearts excised which were plunged respectively in water at sixty-eight deg., hundred and four deg., and thirty-two deg. Fahr. the first lived thirteen minutes thirty seconds, the second seven minutes and the third five minutes. As these animals lived entirely by the nervous system in these circumstances, we are taught the direct influence of temperature over this system.

"*Of the modifications in respiration depending on species, age,*" *&c.* Such is the heading of the seventh chapter, in which, after pointing out the difference in the time during which a frog and a bird can live in the same quantity of air, the author admits in part the common explanation of the greater surface of the lungs and the frequency and extent of the respiratory movements and the quantity of blood passing through the lungs of a bird whereby it exhausts in an hour oxygen enough to support a frog for three or four days. But he insists also on other still more important peculiarities in the blood itself. That of frogs is more watery and consists of larger globules than the blood of birds—the former requires in consequence less oxygen. Hence a division of vertebral animals into those of warm and those of cold blooded,—the first including the mammifera and birds, the second reptiles and fishes,—connected with another very important distinction; viz. the activity of their respiration. To this classification Dr Edwards has added a third series of animals, warm blooded when in the energetic enjoyment of their functions, but approaching to the cold blooded in infancy or during the predominance of particular physical agents. He has shewn that the mammifera which are born with their eyes closed, and birds hatched without feathers, and also the hybernating animals, are, as far as regards the evolution of caloric, of this nature. In the early period of the existence of such animals and in the torpid state of the hybernating ones—less air is consumed by respiration. It has also been shewn that the individuals of different tribes, which in consequence of the diminution of the external temperature acquire the faculty of evolving more caloric, do also consume more air.

In chapter eighth is considered "*the combined action of air and temperature.*" In the first part of the work it was shewn that individuals of the batrachia tribe could live for a length of time under water, deprived of course of pulmonary respiration and sustained entirely by the action of the air in the liquid on the skin. But this process could only be performed on condition that the water was of

reduced temperature, as between freezing point and fifty deg. Fahr. If the medium was of increased heat the greater number of the submerged animals would perish; unless they were allowed access to the air and the use of their pulmonic apparatus. These experiments are in perfect accordance with what takes place when these animals, especially frogs, are left to their natural course of actions. Thus in autumn and winter and in the beginning of spring they can live almost entirely under the water of marshes, ponds and small rivers, their natural residences, which during all this time are hardly ever up to fifty deg. Fahr. In proportion however to the augmentation of temperature is the necessity for them to come frequently to the surface to breathe, and during hot weather they can scarcely live without continued pulmonary respiration. Nor is this to be kept up compatibly with even temporary delay in the water. They are obliged to go on land in order to place to the greatest account their cutaneous respiration, which is more active in the atmosphere than in the small quantity of air contained in the water. During a hot summer if they cannot leave the water they die. The same series of phenomena is found to take place in fishes similarly circumstanced.

Warm blooded animals are on the same line in this respect, as proved among other facts by an experiment of Le Gallois. A section of the eighth pair of nerves produces such a degree of occlusion of the glottis in puppies a day or two old that very little air can enter into the lungs—so little that the animal dies as soon as if it were entirely deprived of it. But let it be benumbed by cold, and in place of dying as before in half an hour it will survive the section of the nerves for a whole day.

The application and proof of this principle is found in the adult age and in man. Suppose a person asphyxied by carbonic acid gas —the pulsations at the wrist are no longer perceptible; respiration has ceased, yet the beat is greater than usual. Still the heart continues to beat and the air exerts its vivifying action on the skin with which it is in contact, and also with the lungs although they be quiescent. The course to be pursued under such circumstances is to divest the person of his clothing, in order to give the air freer access to his skin, and to expose him to the cold even in winter and throw cold water on his face. In sudden syncope, when the pulse is feeble or imperceptible, and respiration and voluntary motion are suspended, the most ignorant will have recourse to exposure to the air, ventilation and refrigeration with water. So likewise in the suffocation of

a paroxysm of asthma, the patient opens the window even in mid-winter, breathes a glacial air and is relieved.

In speaking of the "*effects of temperature on the respiratory and circulatory movements*," the author adverts to the well known effects of heat in accelerating respiration and circulation, and points out the causes of this state. As may be inferred from what has been already said, the operation of heat on the animal economy is modified and restrained by extending the relation between the lungs and the atmosphere—hence the accelerated breathing in order to introduce more air than usual into the pulmonary vesicles. The effects of cold are not so distinctly appreciable. Gradually applied to reptiles, it diminishes the frequency of the respiratory movements, and may, if not carried too far, gradually suspend them without extinguishing life. During this time their animal heat follows the diminution of the atmospherical temperature, and the minor activity of respiration. In hybernating animals of the class of the mammifera, we witness the same series of phenomena; but if the cold be very intense they cannot live in their torpid state; their respiration in place of being nearly quiescent must be accelerated, in order to enable them to resist this now deleterious agent. The young of those animals, such as of birds hatched without feathers, and of the mammifera born with their eyes closed, which are unable to preserve an equable temperature in the open air, exhibit under the influence of extreme cold accelerated and ampler respiration. In adult warm blooded animals not subject to hybernation, the application of cold, or chilling them, always caused hurried breathing until the strength was exhausted. We infer from all this that the most important modifications of function in the two classes of birds and mammifera, in the progress of age from birth to the adult state, consist in the production of heat and extent of respiratory movements. With the development of these two functions is diminished the influence of the external temperature. Hence we are taught that when the constitution of an individual is changed, so that there is diminished production of heat and consumption of air, he can no longer tolerate the same degree of cold as before. And hence also the necessity, when these functions are deteriorated, as in organic alterations of the heart and lungs, of placing him in a milder temperature, produced either by artificial means or obtained by change of climate.

The direct experiments elucidating these principles are given in the next chapter, under the head of "*the influence of the respi-*

ratory movements on the production of heat." M. De Saissy took a bat in a completely torpid state, and with a temperature of 39 degrees Fahr. the air of a room being 34½ degrees Fahr. and irritated the animal by mechanical means. It was an hour in being roused. Thirty minutes afterwards its body was at 59 degrees Fahr. and in another half hour at 80½ degrees Fahr. A hedge hog, torpid in the same place, was only at 37½ degrees Fahr.; but after a lapse of two hours, and excitation similar to that practised above, it was roused from its lethargy with a temperature of 54½ degrees Fahr. In an hour afterwards it was 86 degrees Fahr. at which point it remained stationary. A mountain rat in the same circumstances was stimulated in a similar manner. In the course of an hour its animal heat was at 77 degrees Fahr. and after an equal lapse of time it had attained to 97 degrees Fahr. its natural temperature. The operation of the external cold is shewn in the following experiments. At the same time and in the same place, in which he executed the preceding ones, he placed in a window with a northern exposure, and to a temperature of 25 degrees Fahr. a hedge hog and a mountain rat, each being at 39 degrees Fahr. Their respiratory movements were very feeble. The second of these animals awoke sooner than in the former experiment, and ran promptly to its cage. After the first hour of its exposure to the cold its temperature was raised to 77 degrees Fahr. and after the expiration of the second to 97 degrees Fahr. The hedge hog awoke two hours and a half from the beginning of the experiment—its animal heat was then only raised to 54 degrees, and at the end of five hours it was 82½ degrees Fahr.

In many instances Dr Edwards is induced to believe that accelerated respiration beyond the healthy measure is a salutary reaction for the purpose of increasing the heat of the body and enabling it to resist the action of the cold. The author would lead us to believe in the literal fulfilment of the language of the fable, or blowing hot or cold in the same breath. In another part of his work he shewed us how the deleterious operation of heat is mitigated or prevented by increased activity of the respiratory apparatus. We believe that he mistakes coincidences or co-existing phenomena for cause and effect, a besetting sin in all our reasoning, whether physiological or philosophical. Thus he tells us that young birds, taken from their nests and exposed to the air of a room which was sixty-four and a half degrees Fahr., lost five degrees of their

heat; and yet their respiration was accelerated to the extent of one hundred and twenty breathings in a minute, which lasted for twenty minutes.

In the eleventh chapter, "*on transpiration*," Dr EDWARDS begins by laying down the position that this process is gradually decreasing after the lapse of a certain number of hours, and that in man this period will embrace about six hours, from six in the morning until noon. The losses by transpiration are he thinks progressively less after this last epoch on through the twenty-four hours. The author notices the discrepances between SANCTORIUS, and KEILL and DODART, respecting the effect of a meal on insensible perspiration; he does not agree with the former in supposing it entirely checked for three hours after a meal. In reference to the influence of sleep on the function, he is of opinion that the action of the skin is often greater, as we see in children during this state. The effects of the hygrometrical condition of the atmosphere correspond with those already detailed on reptiles and fishes. A dry air, notwithstanding the evaporating and consequently refrigerating power, increases transpiration; an agitated air has the same effect, so has also a rarified atmosphere. We do not clearly comprehend the section in this chapter in which the author endeavours to draw the distinction between transpiration by evaporation and that by transudation. He is not we think on this occasion very happy in his selection of terms nor in his explanation of them. By the former he means a process which goes on in the dead body as well as the living in virtue of the porosity of organized substances by which fluids near the surfaces in contact with the air are converted into vapour. By transudation he wishes us to understand a secretion from the skin or open surface usually, though not necessarily, palpably, fluid: of course it is the product of vitality.

In comparing *cutaneous with pulmonary transpiration*, he indicates as one point of difference the loss of fluid from the lungs, being entirely by evaporation; there is properly speaking no pulmonary transudation. Hence the transpiration from these organs is much more regular and uniform than that from the skin, though in less quantity, being according to LAVOISIER and SEGUIN a third of the entire amount of transpiration from both surfaces.

Dr EDWARDS, in opposition to the opinion of SEGUIN, is disposed, as well from experiments on animals as from observations on man, to admit cutaneous absorption in water to an extent equivalent to

the loss by transpiration in the same medium. He asserts likewise that absorption takes place in a humid air, and that the actual loss of weight in such a medium is the difference between the loss by transpiration and the gain by absorption, the former process prevailing over the latter.

In the fourteenth chapter, "*on temperature*," we are presented with an account of the various experiments made to determine the degree of heat which can be borne by men and animals. On this subject reference is naturally made to the names of TILLET, DUHAMEL, FORDYCE, BANKS, BLAGDEN, SOLANDER, DOBSON, DELAROCHE, and BERGER. The two last mentioned gentlemen exposed several vertebral animals, such as a cat, a rabbit, a pigeon, a yellow hammer and a large frog, to the heat of a stove, ranging from one hundred and seven degrees to one hundred and thirteen degrees Fahr. during an hour and a half without their suffering much inconvenience. DOBSON relates the instance of a young man exposed to a dry heat of two hundred and ten degrees Fahr. during twenty minutes; his pulse rose from seventy-five to one hundred and sixty-four beats in a minute. BERGER supported a heat of two hundred and twenty nine degrees Fahr. for seven minutes, and BLAGDEN of two hundred and forty to two hundred and sixty degrees Fahr. during eight minutes.

In moist heat, as a vapour bath, BERGER was obliged after twelve and a half minutes to come out of one which had risen from one hundred and six degrees to one hundred and twenty eight degrees during his stay in it. He was weak, barely able to support himself and had vertigo.

In regard to water, we are told that LEMOUNIER when at Barèges plunged into the warmest spring at one hundred and thirteen degrees Fahr. but could remain in it only eight minutes.

Increase of animal heat follows exposure to a very elevated temperature. BERGER and DELAROCHE exposed animals to a heat varying from 122 to 200 degrees Fahr. and found that their bodies had gained from 11 to 12 degrees Fahr.

The influence of cold is much increased by air in motion. In one of PARRY's expeditions to the north west, it is related that the men could bear very readily a cold and calm air at zero, or thirty-two degrees below freezing point. Whenever the wind rose, no matter from what quarter, there was an elevation of temperature; but the cold was then felt much more sensibly, as for instance in a breeze,

when the mercury was at 20 degrees Fahr. above zero. Dr FISHER gives a still stronger case. He tells us that they were not so much incommoded by a cold of 51 degrees Fahr. below zero, or 83 degrees below freezing point in calm weather, as they were by the air in motion or blowing at zero.

The next chapter, "*on the influence of light*," contains an exposition of facts, going to shew the favourable operation of this agent on the development of animals by hastening their metamorphoses and their growth. We do not feel inclined to lay much stress on the facts cited from HUMBOLDT, which Dr EDWARDS introduces to corroborate his argument. Fulness of form, and regularity and rotundity of outline in naked savages can be explained as readily by the circumstance of their having no ligatures or bandages of clothing, and their being allowed the free use of their bodies and limbs, as by any direct agency of light.

In treating of "*the alterations in the air by respiration*," the author first shews, by comparative experiments on different animals, that the proportion between the oxygen which disappears and the carbonic acid produced varies very much according to the species, age and individual peculiarity of the animal.

The proportion of azote in the expired and inspired air varies according to Dr EDWARDS with the season. In summer the expired air contained an excess of azote over the inspired. In winter the reverse was the case; there seemed to be an evident absorption of this gas. But still farther, he shews that both its exhalation and absorption are constantly going on, and that the predominance of one of these functions over the other accounts for the differences just mentioned. Azote is given out when the animal breathes oxygen and hydrogen gases alone.

The formation of carbonic acid in the lungs is proved by numerous experiments in the work before us to depend on a true exhalation or secretion from their lining surface. Dr EDWARDS found that it is exhaled by the mammifera, reptiles, fishes, and the mollusca—individuals of all of which classes were made to breathe hydrogen gas alone for a length of time. This now generally received fact is in accordance with all that we know of sound physiology, and will, we hope, serve to arrest the speculations of chemists on this subject. But still farther, on the authority of SPALLANZANI and of Dr EDWARDS, we learn, that the quantity of carbonic acid exhaled by animals breathing hydrogen gas alone is equal to that given out when they inhale

atmospheric air. The four fundamental points in the functions of respiration are,

1. The absorption of oxygen gas which disappears:
2. The exhalation of carbonic acid by expiration:
3. The absorption of azote:
4. The exhalation of azote.

The absorbed oxygen may in part contribute to the formation of carbonic acid in the blood: but since in many instances animals have breathed hydrogen gas alone for a length of time, and given out carbonic acid freely by pulmonary exhalation, we must look to other sources of this acid. Of these the digestive canal may be indicated alone. The experiments and observations of JURINE, CHEVREUL, MAGENDIE and others prove that the carbonic acid exists throughout the entire extent of the alimentary canal, is formed during digestion, and to a certain amount is absorbed. Dr DESPORTES has related cases in which symptoms of asphyxia were induced by this cause.

The last or seventeenth chapter of the work contains the "*applications*" of the preceding experiments and observations.

The varieties in the power of evolving caloric and the two principal examples of the operation of cold are presented by the author. The first is in the class of hybernating animals, in which with diminished heat there is a gradual torpor of all the functions. The second is in the warm blooded animals, which are not prone to this periodical lethargy, but on which cold acts by accelerating the movements of respiration and circulation. We cannot refer the torpidity of the first to the mere diminution of the external temperature. Sleep reduces their animal heat at the same time that their respiration is less active and they become in a measure torpid. A consequence deduced from this fact is that the same exposure to cold which in the waking state of man would have no unpleasant effects will be decidedly injurious when he is asleep.

Both dry and moist air tend when applied to a living body to produce cold; the former by evaporation, the latter by a special property of diminishing the evolution of caloric. Dr EDWARDS inclines to the opinion that to this operation of this latter agent we ought to look for the cause of certain intermittent fevers, which occur under circumstances and exposures forbidding the most remote idea of the presence of marsh miasmata. This is an opinion long ago entertained by GIANNINI of Milan, and to which on a former occasion

and in another Journal* we directed the attention of our medical brethren; with the adduction on our part of evidences from other writers on paludal fevers.

The phenomena attending acclimatation consist, as regards the inhabitants of hot countries going to colder ones, in their gaining a greater proportionate power of evolving caloric, and in reference to individuals from cold climates becoming residents of hot ones, in their losing after a time a portion of their faculty of creating heat. The inconveniences, sufferings and diseases in either case will depend on the tardiness with which the power of evolving caloric is increased in the former and diminished in the latter case. A like difference is found to prevail in winter and summer—the animal heat evolved and evident being much greater in the first; nor does its existence in minor degree in the second depend as is commonly believed on evaporation.

The author here discusses a point which he passed over in the body of the work. It is whether there be a real and perceptible variation of the temperature of man and animals according to the seasons. He found an evident difference in this respect in sparrows,—which in February were one hundred and five deg. and in July one hundred and ten deg. Fahr. Mr John Davy observed that the residents of the island of Ceylon, whether natives or strangers, had a greater heat than the usual mean by one or two degrees.

The increase of heat in the body during disease is often very considerable. Dr Prevost of Geneva mentions an augmentation of more than twelve deg. in a boy affected with tetanus.

The operation of humid cold points out the efficacy of cold bathing in diminishing the morbid evolution of caloric, or of aspersion or ventilation with the same view.

A rarefied and dry atmosphere, while it diminishes heat by evaporation, will also produce other phenomena of a painful, if not dangerous nature—as when persons ascend to the top of very high mountains. Their hurried respiration and general languor and distress are removed by moisture, even though the atmosphere be rarefied as before. A troublesome affection in these cases is vomiting, which Dr Edwards conceives to be an effect of the diminished relations be-

* Dr Chapman's Philadelphia Medical and Physical Journal, Vol. VII. pp. 142—7.

tween the external air and the animal economy. He produced vomiting in birds by keeping them some time in a highly rarefied air.

The bad effects of rapid evaporation from the pulmonary surface are felt in the oppression of the chest in a hot stove room. The air in frosty weather contains but little watery vapour, while the heat of the stove by elevating the temperature of the mass of air augments its capacity of saturation by vapour—so that in equal temperatures the quantity of fluid dissipated by evaporation is greater in this situation than during summer. Popular practice gives a remedy for this inconvenience in a vessel of water placed on the stove; but it is unsufficient.

The extreme aridity of the skin and air passages in many acute diseases must be attended with very bad consequences distinct from the disease of which it may be one of the effects. A moist air inhaled, and moisture to the skin could not fail to be beneficial in such cases, and perhaps tend to diminish their mortality.

The pernicious effects of cold on young animals, and the known minor temperature of infants are pointed out by Dr Edwards as reasons for a rigid attention to the proper means of affording protection to children against a low temperature of which adults would hardly complain. The changes induced by exposure of young subjects to cold are slow and insidious.

The connexion between respiration and the evolution of caloric receives a practical application in the treatment of pneumonia. The danger here consists in the restricted relations between the individual and the external air, owing to the inability of the lungs to expand: and the most urgent indication is to place the system in such a state as shall enable it to tolerate this limited respiration. In whatever manner the blood contributes to the production of heat, we know of a certainty its agency in this respect. Of course, if we detract the pabulum of heat we diminish its evolution, and the body can do with less respiratory effort than when its temperature is much exalted. A small blood-letting is not sufficient for this purpose: but a large sanguineous evacuation cannot but diminish the faculty of producing heat; and will thereby bring the system to that state in which it has the least want of air. The relief obtained by the operation depends in part on another circumstance already adverted to. The more the blood abounds in globules and the smaller the quantity of water in it, the greater is the evolution of caloric and energy of respiration. Detract blood to a considerable extent

and the proportionate quantity of the globules is lessened. Absorption does indeed soon supply the loss of blood as far as regards the mere fluid, but it does not convey the globules into the vessels: it carries water and whatever other substances it may hold in solution. Reduced diet, by giving a supply disproportionate to the consumption of the globules, will have, but in less degree, the same effect with bleeding.

Here we conclude our analysis of the work of Dr EDWARDS. If we have been at all successful in our task, we need not praise the patient observations and faithful experiments and cautious inductions of this accurate and philosophical physiologist. He has done that for our profession which must to him be a source of higher gratification than all the prizes of the academy. He has given a large and valuable collection of data, from which we may draw the most useful deductions for physical education, the preservation of health and the treatment of disease.

There are near seventy pages of tables at the end of the work, exhibiting the numerical results of a great number of experiments alluded to in the progress of the inquiries which he instituted. The appendix, for which Dr EDWARDS acknowledges himself indebted to his friends M. PREVOST and M. DUMAS, contains a succinct account of our present knowledge of animal electricity and of the means of investigating this interesting subject.

****.

PROCEEDINGS OF THE MEDICAL SOCIETY.*

ARTICLE XVIII.—*Report of the Committee of the Philadelphia Medical Society appointed to collect facts in relation to the recent occurrence of Small Pox in this City.*

It having been currently reported that several members of the medical profession had lost their confidence in vaccination to such a degree, as to render them willing to recur to the practice of inoculation; and considering the highly important interests likely to be affected by such a rumour, the undersigned were appointed, on the 16th of February, a committee to collect facts in relation to the recent occurrence of small pox in this city, and report to the society. Accordingly, on the 18th of February last, they issued a printed circular addressed to several physicians of Philadelphia, of which they submit the following copy:—

Sir,

Having been appointed a Committee from the PHILADELPHIA MEDICAL SOCIETY to collect facts in relation to the recent occurrence of SMALL POX, we have taken the liberty to request of you an answer to the following queries:—

1. Have any cases of Genuine Small Pox, subsequent to Vaccination, come under your *personal* notice?
2. In such cases, what reasons have you for believing that Vaccination was properly performed?
3. How many cases of deaths from modified Small Pox have come under your *personal* notice, and what were the circumstances attending such deaths?

---

* [We have unwillingly excluded from the present number two valuable articles forming our Medical Literature Department, in order to make room for the Report of the Medical Society on Variola and Vaccina—subjects possessing at this moment peculiar interest from the occurrence of the former as an epidemic, and from its occasionally attacking protected individuals.—ED.]

4. How many cases of Small Pox subsequent to previous inoculation or natural Small Pox have come under your *personal* notice?

5. In the last set of cases have any and how many deaths occurred?

6. Have any facts come under your *personal* notice, tending in any degree to weaken your confidence in the efficacy of Vaccination as a preservative against the *fatal effects* of Small pox?

An immediate reply to the above queries will confer a very great favour on

Yours respectfully,

EDWARD JENNER COXE,
D. FRANCIS CONDIE,
CH. D. MEIGS.

It will be seen, by reference to dates, that a very prompt and kind attention was paid to the above queries by a considerable number of medical practitioners, whose opinions are entitled to the respect and confidence of this community and the profession at large: among these, we might enumerate several gentlemen, who at an early period rendered the most signal services to the cause of vaccination, and who, in the progress of an enlarged experience and with a more mature judgment, have not lost any part of their confidence in its antivariolous efficacy.

Your committee will not refrain from an expression of thanks to the gentlemen who have so kindly, out of respect to the Medical Society, co-operated in this investigation; this promptitude on their part has been a source of heart felt satisfaction, not a little increased by the proofs contained in their letters of unanimity as to a great and beneficent doctrine, which, tending to avert one of the most deadly of human evils, deserves, like the doctrines of religion and liberty, the warm support and cordial acceptance of every enlightened citizen. This unanimity so consoling to the friends of vaccination could not have existed, had the doctrines of JENNER depended on unsubstantial hypotheses for their only basis and confirmation.

Although the history of vaccination is a history of its uniform and ascendant progress over all obstacles, whether of ignorance, prejudice or avarice, there have always been those, who, unwilling or unable to survey the whole subject, which ought to carry conviction to every judgment, have preferred to rely on their own limited experience of a few doubtful exceptions and reject the boon of JENNER, rather than yield assent to a mass of evidence such as has

scarcely ever been accumulated in any other department of human investigation. The doubts, hesitancy and fears of such individuals ought not, and it is believed will not, prevent the extension and ultimate triumph of vaccination; when the variolous contagion, like the Jewish leprosy, shall cease to deform and destroy the race of man. The dogma of WILLIS, "Convenit enim homini omni, soli et semel, variolis aut morbillis affici," has already ceased to be true or accepted, however true it might have been anteriorly to the researches of JENNER.

Notwithstanding that the anxiety of the public mind and of a very few physicians, in relation to the prevailing varioloid affections, may appear to derive some grounds from the number of persons who subsequent to vaccination have sustained an attack, your committee find it difficult to conceive of the necessity for stronger evidence in favour of the vaccine than is already in the hands of the people. What corroboration in fact is necessary or possible, where it is admitted, on the experience of half a century, that millions of lives have been preserved; that variola has from some countries been wholly exterminated, and in most parts of the globe disarmed of its dangers and deformity; that thousands of individuals, protected by its means, have been inoculated, and with impunity exposed to the concentrated contagion of small pox; in fine, since the growing lights of experience and philosophy teach both reason and the senses that the doctrine of JENNER is incontrovertibly true?

But the public mind, in all the concerns of health, derives its impress, in a great measure, from that of the medical profession, and it is true, that some individuals in this city have freely expressed their doubts and apprehensions in relation to varioloid susceptibility. The ignorance of the public in relation to the laws of the vital actions is not a matter of astonishment or a subject of censure; and the alarm so naturally created by the occurrence of a severe varioloid eruption can only be allayed by the soothing and confident voice of the physician: but that the latter, also, should take the alarm, and concur in giving wings to rumour, is a circumstance most deeply to be regretted.

It is scarce necessary to state to the society, that this can only arise from imperfect or erroneous views of the power of certain causes to modify, and that permanently, the physical constitution of man.

The proposition to be solved in the premises is not, whether any cause can so change the *structure*, *irritability* and *sensibility* of the

living tissues as to incapacitate them from suffering a second impression from a similar cause; for there is no physiologist who will deny the affirmative to be true. Mankind wish to know whether vaccina can so change the structure or properties of the tissues, as to render them unsusceptible of the impressions of variola. This is the question which agitates the public mind: *Shall we be safe from small pox if we are vaccinated?* The committee, willing to leave out of the question all the testimony of Europe, Asia, Africa, and the by gone experience of the whole United States, are prepared to answer, from the documents now on the table, yes:—these documents prove it incontestably. The Society will hear them in a subsequent part of this report.

Who doubts that measles, once suffered, incapacitates that individual, in all future time, from undergoing the same pathological state? And yet what practitioner, of a few years' standing, has not witnessed a second attack of rubeola? Is not the same thing true as regards parotitis, varicella, scarlatina, pertussis, &c.? Confessedly, these diseases have been known to attack a second, and even a third time, in numerous instances, ever since they first became the subjects of medical history, and this too, without invalidating the truth of, or preventing the public reliance on, the general rule, *that an attack is only sustained once by each individual.*

If this point be conceded, it may be used as an unanswerable argument against those who have so causelessly abandoned their faith in the guardian power of vaccination; for it shews that exceptions to the modifying power occur in all diseases.

The constitutions of men being not all alike, one individual may suffer severely with an undoubted rubeola or variola, without undergoing that perfect and exempting modification which, in another, is effected by a much slighter attack,—hence, we not very unfrequently find that individuals, (as in the patients noticed by Dr Otto and Dr Condie) who are deeply pitted from the pustular suppurations of small pox, are attacked a second time, while those, on whom the arrows of pestilence left not a single trace, escape a second assault entirely, though frequently and openly exposed to the contagion. In this place, we may take occasion to say, that it is probable that greater malignity of the virus or miasma will be found to occasion a renewed attack in those partially protected constitutions which, under its ordinary ratio of intensity, would have remained wholly undisturbed. And such an hypothesis may be reasonably adduced

in explanation of the more frequent occurrence of varioloid disease since the epidemic constitution first manifested itself in Scotland. Not only has it been proved that the human constitution is susceptible of such modification of textural or vital properties by the *contagious diseases*, it has been clearly shewn in Germany, that even *medicinal plants* are capable of withdrawing us from the influence of these contagions: thus, belladonna, which in certain doses produces a scarlet efflorescence or inflammation of the skin, is habitually resorted to by many practitioners in that country, to anticipate, as by a substituent and safe inoculation, the more dangerous or mortal assault of scarlatina; a practice by means of which many lives have already been rescued from a premature termination. This homœopathic practice is but a result of the original proposition of Dr JENNER.

JENNER's immortality is due to this, that he first invented and successfully practised the art of substituting a mild and safe *animal poison*, to effect that modification of the constitution which previously had only been produced by a harsh and often mortal one.

Your committee will not here use arguments to prove that vaccina is a substitute in this operation for small pox; or that it produces, without pain or hazard, an equal, if not superior, protective modification of the physical constitution. They leave this question to be again decided on a review of our correspondence, as it has already been for the millionth time in various parts of the globe.

Much of the hesitation and error at present prevailing among us has arisen from the circumstance, that the early friends of vaccination, like those of inoculation, believed and boasted too much: they boldly asserted that vaccination was a perfect safeguard in all cases; and that, too, in the face of numerous facts, demonstrably proving that the most violent course of small pox could not always withdraw the sufferer from the power of a second infection. It is not surprising that the enemies of vaccination should have seized upon the exceptions, to shew that, as a part of the doctrine was untrue, the whole might or must be so. Such is actually the state of things in this city; and it seems to us that if the public could be once completely enlightened as to the *real* degree of efficacy, these exceptions would weigh not a feather against the general tenor and amount of our success, absolute and perfect. Mr JAMES MOORE, author of the histories of vaccination and small pox, admits that he had been one of these assertors of indiscriminate success, and no-

tices the ill effect of such mistakes, but he reformed, and corrected his error, as most enlightened persons have done beyond the Atlantic. The miserably lean and meagre state of the medical press in this country, which has given us no copy of those works and many others on the same subject, must be charged with the perpetuation of the error on this side of the ocean; else it would be incredible that so many years of experience and such reiterated announcements should have left any part of the profession in ignorance of their mistake. If the public had been told how far they could rely, they would never have been disappointed.

The varioloid epidemics have produced, it is said, a larger amount of exceptions than had been noticed previously to their occurrence in Scotland and England, where they appeared first about the year 1813, and where they excited the wonder and astonishment of the people, who had so long rested in a confident and undisturbed security under the guardianship of the vaccine.

Your committee are not disposed to deny, that since the year 1813 a far greater number of vaccinated persons have been attacked by a mild and modified small pox, than had antecedently to that year been affected by it; but this circumstance, which has occasioned such great consternation and fear, will, on a candid inquiry, be seen to redound greatly to the credit and promotion, instead of to the defeat and overthrow, of the JENNERIAN doctrine and practice.

This is undeniably true, as to the popular confidence in Europe; for it may be safely averred, that the varioloid epidemics, especially those of Norwich and Edinburgh, have confirmed and established its credit with the inhabitants, who, while they have beheld the unusual spectacle of a vaccinated individual affected with a mild and modified variola, frequently met with a severer form of the disease in those who had previously undergone the natural or inoculated small pox. Finding an invariable security neither from inoculation nor vaccination, they have learned to prefer the latter, as the most invariable and complete protection. The documents on the table teach us that the same results are to be expected from the exactly similar occurrences of the prevailing epidemic of this city.

While on this topic of exceptions, it may not be amiss to observe that there are many circumstances to be offered in explanation and excuse of this greatly augmented occurrence of modified small pox.

The history of the genuine disease is full of examples, shewing its greater violence, prevalence and mortality at one time, or during one epidemic constitution, than another. In some seasons it was a mild and safe disease, if compared with its deadly ravages and infectiousness in others. Possibly, the rare appearance of varioloid eruptions, previously to the outbreaking of the Scottish epidemic, may have depended on the mildness of the antecedent constitution; and it is conceived that this supposition derives support from the exceeding great mortality of small pox occurring in the unprotected since that period, and from the fact that secondary small pox, or that taking place in persons who had previously been variolated, is infinitely more common and obvious, within the last fifteen years, than it had been in any equal previous duration: so common has this occurrence become, that some have imagined a new and undescribed disease, or have regarded it as an epidemic varicella: but without seeking in these phenomena the evidences of a new and unheard of epidemic, we may more rationally refer them to an augmented intensity and malignancy of the variolous miasma. Moreover, has not the precious boon of JENNER lost, by our familiarity with it, some degree of that almost sacred respect with which its inestimable worth ought to inspire the minds of physicians, who are its sole depositories? Did not a long impunity and uninterrupted enjoyment render us forgetful of the precepts of this momentous subject? Hundreds of persons have been vaccinated by those who were totally unqualified to judge of the genuine or faulty character of vaccina. Is there not a common disregard to the state of the skin and the other requisite provisions for its successful application? Do not three or four careless inspections of the vesicle commonly suffice for all attention and cautiousness; and as to the records of cases, what are they more than a loose charge in the day book, or a treacherous reminiscence of a long forgotten and common event?

In addition to the above, we may cite the present condition of the vaccine virus in this country, every specimen of which is probably derived in line direct from original samples sent from Europe a quarter of a century ago. It is a very common and loud complaint that we do not communicate vaccine so readily and certainly as we could some years since; and one of our respected correspondents, RICHARD HARLAN, M.D. suggests that this may be owing to a de-

terioration of the lymph. He recommends that it should be regenerated by resorting again to its original source.

Having already hinted at the sentiment which has found some degree of currency, viz. that the existing epidemic owes its rise to a poison different from genuine variola, we will, without entering into a discussion of the subject, remark that, from the documents before us, we remain convinced,

1. That the disease, when affecting persons not previously variolated or vaccinated, is the genuine small pox of authors:

2. That in those who have previously had variola or vaccina, it is small pox modified more or less, by the state of the constitution:

3. That modified small pox, or varioloid, as it is commonly termed, may, as to symptoms, approximate indefinitely near to the clearly defined characters of genuine variola.

With regard to the average number of absolute exemptions from variolous influence obtained by the ordinary practice of vaccination, your committee cannot offer any positive information, for want of official documents. In France, more than two and a half millions of persons remained completely exempt during a lapse of thirteen years. And in this city, small pox found not a single victim in the years 1812, 13, 14, 15, 20, 21 and 22*.

Our present population amounts to about 140,000 souls; and we infer, from the most careful inquiry we have been able to make, that 80,000 of these depend solely on vaccina for their protection against small pox. One hundred persons died here with variola in the year 1827; and although the mortality bills contain no reports under the head of varioloid or modified small pox; our documents shew that ten persons are said to have died with variolous disease subsequent to vaccination, and that nine persons perished in the same way after previous small pox. We will examine the pretensions of these cases in another place.

Drs Mitchell and Bell, in their valuable communication on the epidemic of 1823-4, state that of 248 cases of the disease na-

---

* Dr Luder of Altona states that of 234,959 persons subjected to vaccination in Holstein, from the years 1801 to 1822, only two individuals had been affected with small pox, so late as the year 1824; while in the same period of time, only one person had been attacked by modified small pox, out of 447,605 who were vaccinated in the kingdom of Denmark.

tural and modified, that came under their notice, 92 proved fatal; to wit, unprotected 85—previous small pox 6—vaccinated 1. This table alone contains convincing proof of the efficacy of vaccination.

C. Comegys, Esq. President of the Board of Health, obligingly transmitted to us a table (furnished by Mr Jos. Pryor, clerk to the Board) of the cases of disease reported to the Board since their proclamation in April last.

From the 1st April to 31st December 1827,	
Small pox,	181
Modified small pox,	4
Variola,	6
From 1st January 1828 to 19th February,	
Small pox,	48
	239
From 1st April to 31st December 1827,	
Varioloid,	124
From 1st January to 19th February 1828,	
Do.	49
	173

The respective numbers are 177 and 235.

From the clerk's letter it will be seen, as above, that in obedience to the requisitions of the proclamation, there have been reported, from the 1st of April 1827 to the 19th of February 1828, 412 cases of disease, under the several denominations of *small pox*, *modified small pox*, *variola* and *varioloid:* but, inasmuch as many practitioners have not reported their modified cases at all, and many persons have had it so lightly as to require no medical prescription, we are led to believe that about 1000 cases of the disease have occurred both under its genuine, and mitigated aspect. Supposing then that 235 cases of genuine variola had occurred up to the 19th of last month, we have a balance of 765 cases, to place under the heads of small pox subsequent to variola, and small pox subsequent to vaccina. The committee will not attempt an estimate of the

numbers appropriate to the two last divisions. They only suggest, that at least 80,000 vaccinated persons inhabit this city. The ratio of the unprotected and variolated is not to be found.

We will now proceed to lay before the society an abstract of the several letters received in answer to our printed circular, viewing this as the means of communicating the liveliest idea of the actual state of professional sentiment here. In making this abstract many highly interesting details must of necessity be omitted, but it is conceived they will not be lost if securely placed in the archives.

Dr ATLEE, SEN. reports no case of genuine small pox after successful vaccination; nor death from modified small pox: but has witnessed one fatal case in an individual who had previously had inoculated small pox.

Dr ATLEE, JR has seen only one case of genuine small pox in a vaccinated subject. In this case the vaccination had been performed by a "highly distinguished practitioner now deceased," who was satisfied with the vaccine phenomena; but it is worthy of remark that Dr ATLEE found only a *dull white mark* instead of the cicatrix and foveolæ. Has witnessed no death from modified small pox, nor a case of genuine variola after variola: but, "I have seen severe cases of varioloid, after the contagion had been received in either way. None of these were fatal." Lastly, "My own personal observation," says Dr ATLEE, "has in no degree tended to weaken my confidence in vaccination, having tested its efficacy by exposing my own children, and some of my patients, to small pox of a fatal character with perfect impunity."

Dr W. D. BRINCKLE, physician to the Small Pox Hospital. "Believing that the lightest case of what has been termed varioloid will produce small pox in the unprotected, I must regard them as the same disease." Premising this explanation, Dr B. informs us, that he has had under his personal notice 38 cases of small pox subsequent to vaccination—some very violent and some exceedingly mild. What proportion of these would by other physicians have been called genuine small pox, he is unable to say. Dr B. remarks, that it would be difficult for him to determine whether vaccination had been *properly* performed in these cases. His information, shewing that they had been vaccinated, was drawn from the patients, their friends, the cicatrix, and in one instance the vaccinator, a gentleman to be relied on: where the cicatrix was wanting, the case was not considered as a vaccinated one.

Dr B. states, that he has known no death from modified small pox, and believes no such death has occurred; but has lost four patients with small pox, taken after vaccination, viz. 1. Lewis Jackson (coloured), who was vaccinated in Boston ten years ago, and was doing well until attacked by diarrhea, which carried him off after being 17 days in the hospital. 2. Catharine Brown (coloured) vaccinated 8 years; doing well until an abortion with considerable uterine hemorrhage took place, after which she grew worse and died, being 14 days in the hospital. 3. John Morris (coloured), and 4. Geo. Epply (white man), the for-

mer vaccinated 7, and the latter 14 years previously, were the other individuals. John Morris was 3 days, and George Epply 4 days in the hospital.

Dr BRINCKLE further informs us, that he has had 14 cases of secondary small pox, of which 12 occurred after previous inoculation, and 2 after previous natural small pox. Two of these 14 died, to wit, James Pritchard and Spencer Jackson.

Dr B. although he admits that the facts which have come under his "personal notice have tended in no small degree" to weaken his confidence in the "efficacy of vaccination as a preservative against the fatal effects of small pox," yet would not have it inferred, that he is "prepared to abandon vaccination, or that its efficacy as a preservative against the fatal effects of small pox is considered by me (Dr B.) as inferior to inoculation." "Most unequivocally do I avow my conviction, that vaccination is still to be preferred to inoculation." The result of his experience establishes him in the belief that "when the disease occurs in the vaccinated it is usually lighter than when it takes place in the inoculated."

In a second note he says, "I wish it to be distinctly understood, that, until the occurrence of the present epidemic, I never *met with* a case of small pox (neither genuine nor modified) subsequent to vaccination or variolation, although I had seen many of the vaccinated, and some of the variolated exposed to it. On hearing of cases of variola occurring after vaccina, I was therefore led to believe that the vaccination could not have been *properly* performed. But when personal observation convinced me, that individuals, who bore 'prima facie' evidence of having been *properly* variolated, could again have small pox, the conviction was irresistible, that the same thing could *occasionally* happen after vaccination. Impressed with this belief, my confidence in vaccination is in one sense, and only in one sense, weakened. But my confidence in the prophylactic power of inoculation, as well as of natural variolation, has diminished in an equal, if not in a greater degree.

"Decidedly favourable, then, as I am to vaccination, I should really do injustice to the discovery of the immortal JENNER, were I to contend that a properly vaccinated individual could not under any circumstances be subsequently attacked by small pox.

"To conclude,—the result of my present conviction is, that when small pox does not prevail with *unusual malignity* vaccination is a complete safeguard to the constitution. But when small pox does prevail with *unusual malignity*, vaccination, to say the least of it, is still quite as effectual a preservative against the fatal effects of small pox as variolation, whether naturally or artificially induced.

The following additional note will explain itself.

"MARCH 8, 1828.

"GENTLEMEN,

"I understand a report is in circulation, that Dr PHYSICK's confidence in vaccination has, for the last ten years, been gradually diminishing. Knowing the report to be without foundation, I unhesitatingly assume the responsibility of stating most explicitly,

"1. That Dr PHYSICK's confidence in vaccination has not been diminishing for the last ten years.

"2. That Dr PHYSICK has as much confidence in vaccination now as he ever had.

"3. That, as an evidence of Dr PHYSICK's *confidence* in vaccination, he still continues to recommend it.

"I have the honour to be, Gentlemen,
"Very respectfully,
"Your obedient servant,
"W. D. BRINCKLE."

"Drs MEIGS, COXE and CONDIE,
"Committee from Medical Society."

Dr HENRY BOND, in five years last past, has had two cases of small pox after reputed vaccination. One of these was a boy eight years old, vaccinated four years before by a physician who had no record or remembrance of the fact; his arms had no cicatrix, and his friends were of the very lowest class. This patient died, when the secondary fever supervened, of what appeared to be genuine small pox. The second case described by Dr BOND, from the early fall of the crusts, &c. seems to have been very much modified. His patient recovered. The committee consider these cases as not at all inconsistent with the assertions of Dr B. that he has seen no case where there was danger of death or deformity in an individual who had been undoubtedly vaccinated. He states that he could cite numerous cases in proof of the protective efficacy of vaccination, but deems it unnecessary to do so.

Dr JOHN BARNES relates his experience as having been derived from the occurrence of small pox and varioloid disease to the amount of between two and three hundred cases, and replies to the whole of our queries—*None.*

Dr JOHN BELL has seen cases of eruptive disease, resembling small pox in all essential particulars, after vaccination; the evidence of this operation being derived from the scar, or the information of parents or friends: but he has seen no instance of death from the abovementioned cases. He has had no case of secondary small pox during the present visitation. He refers to the four examples of this sort, of which a history has already been given in MITCHELL and BELL's account of the small pox of 1823—4. See the North Am. Med. and Surg. Journal, Nos. 1 and 2.

Although, of a given number of cases of small pox after vaccination, he has seen more violent attacks this season than in the former epidemic: yet, on a review of the whole evidence, not inconsiderable, he can confidently assert that no facts have come under his personal notice, tending, in any degree, to weaken his confidence in the *efficacy* of vaccination as a preservative against the *fatal effects* of small pox. Wherever the danger (with one exception) has been imminent, he has had good reasons to doubt if the vaccination was properly performed. In these doubtful cases (which have all recovered) the symptoms were such as in unequivocal small pox would have augured a fatal termination.

Dr FRANKLIN BACHE has seen no case of genuine small pox occurring after vaccination or precedent variola, nor death from modified small pox. To the sixth query he replies negatively.

JOHN R. COXE, M.D. Professor of Materia Medica in the University of Pennsyl-

vania.—We have been favoured by this gentleman with a most interesting communication, in which we find abundance of both facts and arguments, to corroborate the testimony which he has precedently given on the subject of vaccination. Dr COXE may be regarded as the founder of vaccination in Pennsylvania.

"Twenty-six years," says he, "have just elapsed, since I first succeeded in introducing the vaccine disease into Philadelphia: a new generation has within that period sprung up, who owe their safety from the small pox to the former disease. If we suppose the population of Philadelphia to amount only to 120,000, we shall probably not err in stating the vaccinated portion at one half: we have had, in the period named, the small pox several times amongst us; but, although the inoculation for that disease has been long suspended, except as a test after the vaccine, we have never seen it spread amongst that immense number who have been vaccinated! Is it possible to imagine that one half of a city, like Philadelphia, could have so entirely escaped the ravages of an epidemic, if they had not securely opposed the egis of JENNER to that loathsome and dangerous disease? Where are the numerous vestiges, *now*, of its frightful ravages. It is now as *rare* to see a person disfigured from the small pox, as it was *common* formerly." . . . . . "It will, I think, be found, that the description of varioloid is very similar to that of many of the cases of small pox as laid down by the old writers on the subject; and more particularly of some of those anomalous ones, which were apparent in almost every epidemic described. It is well to remember, that few physicians now living have ever witnessed such an epidemic; and our knowledge must be derived from a close comparison of our so called cases of varioloid with the accounts handed down to us by those who have witnessed small pox in every shape and feature. Let such a comparison be strictly instituted between the accounts left us by SYDENHAM, MORTON and writers even preceding them, and those of varioloid and modified small pox of the present period, and a strong analogy will be found to exist between them."

We will cite further, from professor COXE's communication, the following:

"There is perhaps no individual in the United States, probably in the world, who has a more undoubted right to question the assertions made against vaccination than one of the members of your committee. Himself, one of the earliest of those subjected to its influence, now upwards of 26 years of age; (he was) immediately afterwards submitted to every possible means of variolous infection. Inoculated during a successive series of years, probably, at least fifty times by myself and subsequently repeated by his own hands; he was likewise exposed for a considerable time, and held in the arms of an individual in the most malignant state of small pox, not more than ten weeks after the termination of the vaccine.

"This, together with numerous other trials on the subject made with every possible care and precaution, many of which are detailed in my treatise on vaccination published in 1802, fully satisfied my mind, that the vaccine was entitled to every praise, as a preservative against small pox, which had been ascribed to it by the illustrious JENNER." He proceeds to state that he has no reason to believe that any case that has thus come under his care has been affected subsequently with what is termed the varioloid. The committee regret that they cannot include the whole of this very interesting communication in their report. They hope it will be given to the public in a separate form.

Dr D. THEODORE COXE has seen no genuine small pox after vaccination, nor death from modified small pox—has seen three cases of variola subsequent to inoculated variola. One (an old black) died. He does not feel assured that this man had ever been truly affected with the disease. His confidence in the protective efficacy of vaccine complete.

Dr COMSTOCK reports, that no facts have come under his notice which diminish his confidence in regard to vaccination.

Dr D. FRANCIS CONDIE, physician to out-door poor for the western district of Southwark, has seen a majority of the patients who have been sent from his district to the hospital, in addition to those occurring to him as physician to out-door poor, and in his private practice. Views the disease in the unprotected as genuine variola. States that such cases in 1823,4 very generally terminated fatally; but during the recent prevalence, such have for the major part recovered.

In the same neighbourhood and families with the above, many vaccinated and inoculated persons were affected with a modified disease, in which the eruption appeared sooner, was attended with less inflammation and milder constitutional symptoms: the course was completed in from five to ten days, giving evidence of no fetor, secondary fever or cicatrices.

In vaccinated persons this affection required little remedial treatment, and where Dr C. had vaccinated the individuals himself, and was satisfied with its genuineness, their attacks were invariably mild, with few eruptions on the face, breast and arms.

Cases of modified disease, subsequent to small pox inoculated or natural, were more violent as to eruptions, inflammation, constitutional disturbance, and duration.

Dr CONDIE has lost only one patient affected with secondary small pox. The man was 35 æt. and bore in his face the marks of the antecedent attack, which had been sustained in his youth.

As to the protection derived from small pox, the Doctor thinks his personal experience warrants him in believing, that, if not more liable to the disease a second time, those who have had it once are in "case of a re-attack certainly less fully protected from a fatal result than those who have undergone vaccination."

On the question of identity of the poison which produces variola and its modifications, he cites in proof of it the following cases. Mrs Pritchett, a vaccinated person, severely attacked with the modified form on the 15th October 1817—she was well in ten days. On the 19th idem, her daughter, 3 or 4 æt. and unvaccinated, was seized with small pox, and on the 14th day died. A sister of Mrs P. æt. 16, vaccinated, was also seized on the 19th, with the modified form. On the 1st of November, Mr P. the husband, æt. 35, pitted with previous small pox, was taken sick; and died on the 16th day. A few days after, Mr P.'s son, æt. 10, unprotected, was attacked by natural small pox, and died on the 10th day of the eruption. Dr CONDIE's communication contains several other examples of similar scope and tendency. Our report will not admit of the details.

His own practice affords also very decisive proofs that the vaccine impression does not wear out or lose its protective efficacy by lapse of time, as he has seen

the disease equally violent and equally mild at every period after vaccination, from a few days to twenty years.

Finally, he "conscientiously and deliberately" asserts, that he knows no circumstance calculated to weaken his faith in the preservative efficacy of genuine vaccination against the fatal effects of small pox.

Dr E. JENNER COXE has seen no case of genuine small pox subsequent to vaccination or variolation, nor any death from modified small pox. He regards vaccination as capable, when successful, "of imparting to the system a certain power capable of resisting an attack of *genuine* small pox, or rendering a recovery from modified small pox or varioloid absolutely certain."

Dr B. H. COATES reports no unmodified cases after vaccination, but has seen numerous modified cases of various severity, yet none of them fatal. Has seen no case of any sort after variola. Experience has greatly confirmed his impressions as to the propriety of vaccination as a preventive of small pox; all the cases he has witnessed being incomparably milder than mere variola.

W. P. DEWEES, M.D. adjunct professor of midwifery in the University of Pennsylvania, has seen no genuine small pox after vaccination, no death from modified small pox, nor variola subsequent to inoculated small pox. Nor, continues the professor, "any thing, tending in any degree to weaken my confidence in the efficacy of vaccination as a preservative against the fatal effects of small pox."

Dr W. B. DUFFIELD has had many cases of small pox after vaccination, all very mild, except one which was a very bad case, but recovered. The above had been all properly vaccinated. Has seen no death from "meliorated small pox." Never knew a person to have small pox twice. As regards the sixth question, "I say I have confidence in vaccination, though not of the same kind I had when it was first introduced, because I then believed that all who were properly vaccinated would be forever and entirely preserved from small pox; this, however, I find not to be the case. I am, nevertheless, an advocate for vaccination."

Dr S. EMLEN, one of the physicians to the Pennsylvania Hospital, has seen no genuine small pox after vaccination, during the recent occurrence of small pox here. All his modified cases exceedingly mild, neither has he seen any secondary small pox. Dr E. never knew a fatal termination of varioloid; which, in those patients he had himself vaccinated, has been attended with indisposition as slight as accompanies the most trifling forms of eruptive disease. Says he should, in fact, have called them varicella, had not the source of the contagion been, manifestly, small pox; in some instances, the natural small pox having been present in the house. The disease in children so circumstanced has exhibited great variety, from a simple rash up to the mildest form of variola.

Dr BENJAMIN ELLIS states, that he has seen only one case of genuine small pox after vaccination; the only evidence of the operation being derived from the girl herself, a negro—she recovered. No death from modified small pox. A case of small pox proved fatal in a boy in the year 1823; his mother said

he had been regularly inoculated in Ireland. The eruption was confluent. Instead of any circumstances to weaken his confidence in vaccination, he has observed many that confirm his previous opinion of its superiority over every other preservative, and of its absolute power to modify and disarm small pox of its fatal character.

Dr S. M. Fox has seen cases of small pox after vaccination, but very generally mild and modified; he felt satisfied from testimony, and the comparative mildness of the disease, that vaccination had been properly performed. This gentleman says, "one case of death has occurred under my personal notice from small pox after vaccination: this was a case of confluent small pox, the eruption flat, depressed and of a very bad appearance, slight fetor was observed for a day;—great soreness of the throat, difficulty of breathing and of deglutition, with stupor, were the symptoms of the latter period. This case terminated fatally on the 11th day. The patient had been vaccinated in childhood by a late physician of great eminence." Has seen no case subsequent to variola, but had seven patients of this class in 1823-4: "were said to have been inoculated:" one died: he had no scar from inoculation, but he and his friends were positive as to his inoculation. Dr Fox thought it very doubtful. States that he considers vaccination as the best preservative we are possessed of against the fatal effects of small pox.

Dr L. P. Gebhard had a case of confluent small pox in a female adult: had been vaccinated 20 years—but in consequence of the eruption, could discern no scar. She had no unpleasant odour nor pits—recovered. Is not sure as to her having been properly vaccinated, but thinks the case was somewhat modified. His confidence in vaccination remains undiminished.

Dr Richard Harlan, one of the surgeons of the Philadelphia Alms House, reports two cases of varioloid disease: one in a female, who insisted that she had sustained natural small pox in infancy; it was severe but not fatal. The second (mild), in a gentleman who had been undoubtedly inoculated. His cases of varioloid, after reputed vaccination, have all recovered. Never had varioloid in a patient vaccinated by himself. Has of late years experienced great difficulty in procuring successful results from the use of vaccine matter, although carefully selected. After failing eight or ten times (with the crust), has never failed in the first attempt with fresh lymph taken about the 8th day. Has seen no case of varioloid after vaccination, within 12 years of the vaccination. States his confidence in genuine vaccination as undiminished, but thinks the virus ought to be renovated by taking it again from the cow.

Dr Thomas T. Hewson, one of the surgeons to the Pennsylvania Hospital, being charged with investigations on the subject of variola, &c. by another institution (the College of Physicians), only answers to the last query, that his confidence in the protective powers of vaccination remains undiminished.

Dr R. M. Huston has seen no genuine small pox after vaccination, nor death from modified small pox. Two cases of small pox after variola—none dead. His confidence in the vaccine protection confirmed.

Dr W. S. HELMUTH, vaccine physician for Moyamensing, has seen no genuine small pox subsequent to vaccination. No death from modified small pox. One case of genuine variola after natural small pox—the patient recovered. His confidence in vaccination confirmed by daily observation.

Dr H. L. HODGE, one of the physicians to the Philadelphia Alms House, has seen one case of "apparently genuine" small pox after vaccination; the patient had a cicatrix from vaccination, but not well characterized. He has seen no fatal case of modified variola, no secondary small pox, and notices the protective power of the JENNERIAN method, in rendering mild and gentle a disease which is destroying "one half of its unprotected subjects." He considers vaccination as "far preferable" to inoculation under the most favourable circumstances.

Dr W. E. HORNER reports three instances of small pox occurring after vaccination. The vaccination probably perfect, as Dr H. cites a physician of great repute as the vaccinator in two, and in the third case there was a cicatrix. Has seen no fatal case of small pox, and consequently, his confidence in the efficacy of vaccination, as a preservative from the fatal effects of small pox, is not shaken by his private experience.

Dr ISAAC HEYLIN, early acquainted with the preservative powers of vaccination, having frequently subjected his patients to the test of inoculation, without in any case producing variola. He considers an effectual vaccination as equal in efficacy to inoculation or natural small pox.

Dr THOMAS C. JAMES, professor of midwifery in the University of Pennsylvania, has seen a few cases of mild small pox after vaccination. The eruption ran through its stages more rapidly than in genuine variola: there was no peculiar odour and no secondary fever. In the cases above alluded to, he says, that vaccination was performed either by himself or by friends in whom he places confidence; and that it was strictly satisfactory at the time. Has seen no death from modified small pox: no case of small pox after previous inoculated or natural small pox. And finally, no case has come under his personal notice to weaken his confidence in the efficacy of vaccination as a preservative against the fatal effects of small pox.

Dr HARVEY KLAPP, vaccine physician for Southwark, saw a fatal case of small pox subsequent to vaccination; the operation having been performed fifteen years before, as it was said. He also saw a fatal case of secondary small pox, in which the patient died on the sixth day of the eruption. Has had another case after previous natural small pox, but the person recovered. Says he has seen more cases of modified small pox after vaccination, than after inoculation, owing to the greater number of vaccinated persons. The disease has occurred indifferently from three months to twenty years after the insertion of the vaccine virus. Remarks that he has seen only one case tending to weaken his confidence, and that one doubtful.

Dr JOHN K. MITCHELL, one of the physicians to the Pennsylvania Hospital, refers us to MITCHELL and BELL's paper in the first and second numbers of

the North American Medical and Surgical Journal, for an exposition of his opinions and the facts on which they are founded, and avers that his confidence in "vaccination has been confirmed by his subsequent experience." He prefers vaccination to inoculation, under all circumstances.

Dr GEORGE MIFFLIN has seen no small pox after vaccination; from modified small pox no death, nor small pox after variola. His confidence remains unshaken.

Dr CHARLES MIFFLIN reports that no genuine small pox, after vaccination or variola, has come under his personal notice; nor any case of fatal modified small pox. No facts have come under his personal notice to weaken his confidence in the efficacy of vaccination, as a preservative against the fatal effects of small pox.

Dr THOMAS D. MITCHELL, of Frankford, notices the modified small pox as it occurred at Frankford, in this vicinity, and refers to his essay published in the Medical Recorder for 1822. His opinion as to the preservative efficacy of vaccination has not been in the least changed.

Dr JOHN WILSON MOORE has seen a number of cases of small pox subsequent to vaccination; some of a confluent character; in a few instances he could not discern that vaccination had exerted much, if any influence. Supposes generally, that they had been well vaccinated. Three cases were mortal. One was a male, æt. 19, vaccinated when a lad, first seen on the 6th day of eruption, and he died on the third or fourth, of desiccation. This one occurred in 1824. In 1828, attended a female, æt. 18, who had been vaccinated when a child in the Pennsylvania Hospital, and (so said the parents) in a satisfactory manner. She had a cold when she was taken sick with the varioloid, and when the doctor saw her on the third day of the eruption, "she was labouring under a state of *pneumonia typhodes*." She died two days afterwards, which was the fifth of the eruption. The last was in a coloured woman, æt. 22, vaccinated *in the country when a child*. Dr M. saw her on the sixth or seventh day of the eruption; pock turned on the ninth; when she appeared to be doing well. Fever ensued, with delirium, and she died on the sixteenth day.

The same gentleman reports two cases of small pox after inoculated variola, but no deaths under that head. His confidence is weakened—he early viewed it as an entire preventive of small pox infection. He states that he knows of no death where there has been "professional assurance of satisfactory vaccination."

Dr HENRY NEILL has seen one case of genuine small pox after vaccination. No death from modified small pox. Two cases of modified small pox after precedent inoculated variola. Dr N. informs us that having seen genuine small pox after vaccination, and very alarming modified variola after inoculated small pox, he supposes neither vaccination nor inoculation are *infallible preventives* of the fatal effects of our disease.

Dr JOHN C. OTTO, one of the physicians to the Pennsylvania Hospital, has

seen many cases of what is usually termed varioloid, which he regards as small pox "mitigated by successful vaccination." The disease, though very generally mild, short and safe, was, in a few persons, of a more severe character; not distinguishable from a very high grade of natural or inoculated small pox, excepting in its shorter duration. They had confluent eruption, salivation, sore throat, swelling of the fauces, blindness from tumefaction of the face, and strongly marked secondary fever. There was also permanent pitting, and, in one instance, bloody urine. In these cases there could be no doubt of an antecedent genuine vaccination. These examples furnish no instance of a fatal termination. Dr Otto, since he has been in practice, has had at least five persons affected with small pox, who said they had had it before; in all of them several years had elapsed since the inoculation, and they had in the interval been exposed to the infection without taking it. When they took it at last, they knew not the source of the contagion.

These cases only occurred in years when small pox was unusually general and malignant.

All the cases were dangerous, and one female died. She communicated the disease to her five vaccinated children, three of whom had it confluent—they all recovered.

Dr Otto is not induced, from all he has witnessed, to relax in his efforts to disseminate vaccination as widely as possible. He recommends it exclusively to the patronage of the public.

Dr Ph. Peltz, Jr. No case of genuine small pox after vaccination, nor fatal modified small pox. A few cases of genuine variola after inoculation, and a fatal one after natural small pox. His confidence strengthened.

Dr J. Rodman Paul relates the history of natural and of modified small pox cases occurring in the family of John Havenstrite of Philadelphia, which was composed of ten individuals; viz. three inoculated, four vaccinated, and three unprotected. Of the latter, two were twins two months old, and one about two years of age.

The disease first attacked a boy of twelve years æt. who had been vaccinated when an infant. It was a severe but modified case; recovered. The mother of the twins refused to have them vaccinated; they took the disease, and both perished. The other child was subjected to the vaccine influence which went on in its regular course until the thirteenth day, when he had accession of fever, followed by four or five varioloid pustules, requiring no treatment—he recovered.

The three vaccinated members of the family also had varioloid eruptions of a mild character. The mother who was inoculated suckled her twins; she had fever but no eruption for some days; when her nipples became sore, and a number of varioloid pustules appeared on the breast only. The other two inoculated persons escaped.

Dr Joseph Parrish, one of the surgeons to the Pennsylvania Hospital, has seen two cases of small pox after reputed vaccination, and both proved fatal. One of these cases is reported above by Dr Fox. Dr Parrish is unable to give any clear opinion as to the genuineness of the vaccination in the other case. Does

not recollect ever having seen a fatal case of modified small pox or rather varioloid. Has seen three cases of secondary small pox, two of which were fatal. Two had been inoculated and one had suffered natural small pox. "My confidence," says he, "in vaccination as a preservative against the fatal effects of small pox, still continues firm—the few exceptions do not impair in my mind the efficacy of the general rule, and the same exceptions apply to inoculated and even natural small pox. Hence, as vaccination is entirely free from all risk of life, and from the power of communicating a fatal disease to others, I consider its superiority in every respect most decided."

Dr JOHN RUAN has seen no case of mortality from modified small pox, and states his confidence in the prophylactic powers of vaccination, to be not in any degree weakened by his past experience.

Dr J. C. ROUSSEAU has seen no case of varioloid in any individual vaccinated by himself. No death from modified small pox: has seen violent cases of secondary small pox, but none mortal. His confidence is firmer than ever.

Dr THOMAS SHIVERS. No genuine variola subsequent to vaccination, but has had three cases in persons previously inoculated, one of whom died. Regards vaccination as the only secure prophylactic. As instances of the malignant nature of the prevailing small pox, we will cite from Dr S.'s letter to the committee, the following: "Of seven cases that I have had this season of natural small pox in subjects who had never been either vaccinated or inoculated, *all have died*;" while of about forty cases in persons vaccinated, not one has perished.

Dr W. SHAW informs the committee that he has seen no genuine small pox after successful vaccination. Has vaccinated several thousands since the year 1802, and has heard of no instance of small pox occurring in one of these subjects. No death from modified variola. Of two instances of small pox occurring after inoculated variola neither proved fatal. His early experiments with genuine variolous matter, as a test for vaccination, established his conviction of its efficacy, and he still has the fullest faith in it.

Dr SAMUEL TUCKER. No case of genuine small pox subsequent to vaccination, nor death from modified small pox, or case of secondary small pox has fallen under the notice of this gentleman, who informs us that nothing has occurred in his experience to weaken his confidence in the vaccine protection.

Dr G. B. WOOD. Out of twenty cases of varioloid after vaccination, *one* presented all the symptoms of genuine variola, with the exception that none of the peculiar odour was discernible. This patient had the scar, and said she was vaccinated when a child—recovered. No death from modified small pox. Of three persons precedently inoculated, two had varioloid, and one genuine variola: the man, æt. thirty-five, and intemperate, died. Has seen in his own practice nothing that could justify an opinion that vaccination is not an effectual preservative against the fatal effects of small pox.

Dr JOHN WILTBANK. J. P. a coloured man, æt. twenty-five, had pain in the head, breast and side, dyspnea, high vascular excitement, and all the symptoms of pleurisy. On his arm was a fine vaccine vesicle nine days old. This man was vaccinated on the Monday, seen on the Tuesday week following, when he was bled, blistered and used diaphoretics. On that day a copious eruption of variola presented itself, which proved confluent, and he died on the fifth day. Dr W. adds that the above case is the only one that he has seen, to diminish confidence in the protective efficacy of the vaccine disease.

Dr THOMAS H. YARDLY, answering negatively to our queries, concludes with assurance of his reliance on vaccination as a protection against small pox.

From the above condensed view of the testimony furnished to us by a very great number of highly respectable practitioners, the committee were tempted to trespass no further on your time by presenting additional observations, being persuaded that no candid mind could remain in doubt, either as to the value of vaccination as a prophylactic in the case under consideration, or as to the sentiments of the medical profession in this city towards it; but, although not one dissentient voice has been raised, it is deemed proper to make a few further remarks. And

1. These documents shew that varioloid disease has attacked both variolated and vaccinated persons.

2. Of the whole number of variolated cases, say seven hundred and sixty-five, far the largest proportion occurred in vaccinated persons, a circumstance which, as a naked proposition, might tend to exalt the public confidence in inoculation at the expense of vaccination. Now, although we are unable to ascertain with any pretensions to preciseness the just allotment of the two orders of cases, enough has been said, to indicate that the susceptibility to *varioloid* is not very greatly different under both sorts of protection. It is highly probable that at least eighty thousand vaccinated persons reside in this city; while there are not more than twenty thousand, and probably even a smaller number of variolated persons; hence, on the supposition of an exactly equal susceptibility, we ought to find four cases of varioloid after vaccine, to one case of the same affection subsequent to variola.

In the documents, ten deaths are reported as having occurred from small pox subsequent to vaccination, while nine are cited as proofs of the failure of variola to protect the constitution. Let us examine a little the circumstances of the ten fatal cases, and we shall see if they can be fairly cited. For example out of the four

reported from the personal observation of Dr BRINCKLE, one, Catherine Brown, was doing well until an abortion with uterine hemorrhage took place, after which she changed for the worse and finally lost her life.

The cases of Epply and Morris, which were under treatment four and five days respectively, are liable to be questioned. No positive record is given of their having been vaccinated : the only assurance is derived from their own assertions. Even the case of Spencer Jackson, who died in the hospital seventeen days after his admission, is obnoxious to the same doubts, in consequence of its protracted duration. And it is easier to believe that all these individuals had undergone a spurious form of vaccine than that vaccine should have failed to protect them.

Dr BOND's case is considered by him as extremely questionable. Dr FOX's case may be admitted as an example of death from small pox subsequent to vaccination. The known character of the eminent and conscientiously cautious individual who had vaccinated the unfortunate gentleman forbids us to doubt that he considered his vaccination perfectly satisfactory, or that he could be mistaken in its character.

Dr KLAPP's case is stated by him to be doubtful. Of Dr MOORE's fatal cases only two occurred in 1827, 8. The woman when taken sick was suffering under a cold, and was labouring under an attack of pneumonia typhodes when the Dr saw her on the third day of the eruption : she died on the fifth day. The second woman died, on the sixteenth day, of a secondary fever which came on after the pock turned.

There will be no reason to charge the committee with want of candour if they reject both these examples of death from small pox after reputed vaccination. The pneumonia typhodes has no necessary connexion with variola, and the woman's death ought rather to be charged on that terrific complication than on an implied impotency of the vaccine. The second case from its long duration and other phenomena seems to have been an unmodified small pox. No fatal case of modified small pox has been adduced. In neither case is there furnished an authentic record of the vaccination,—which ought therefore to be deemed hypothetical. Lastly, Dr WILTBANK's case, occurring before the constitution had been modified by the maturity of the vaccine vesicle, proves nothing against its value and efficacy.

Thus we may, without the least want of candour, come to the conclusion that only one death from small pox after vaccination has occurred in Philadelphia during the year 1827, among eighty thousand vaccinated persons and during the prevalence of a most malignant and mortal small pox, while several individuals have lost their lives from small pox after they had already gone once through the disease. It appears then clearly that vaccination ought to lose nothing of the public confidence; and, as a protection from the fatal effects of genuine small pox, it may safely be asserted, that it is in every sense to be preferred to inoculation.

Let the public be well informed with regard to the real degree of efficacy of the vaccine virus—let them be no longer told, it will positively shield them from the assault of small pox in any shape and every instance. They will confide in it if we point them to the physicians who rely on it for the safety of their wives and children, and defended by "the egis of JENNER," walk unharmed themselves amidst the arrows of pestilence and death.

EDWARD JENNER COXE,
D. FRANCIS CONDIE,
CH. D. MEIGS.

The committee have received several communications, in reply to their queries, since the above report was finished; and they regret that the lateness of the period at which they arrived prevented their incorporation into the body of the report. The writers are Dr W. CARLL BREWSTER; Dr J. GREEN; Dr JOSEPH HARTSHORNE; Dr B. S. JANNEY; Dr JOSEPH G. NANCREDE, vaccine physician for the city; Dr O. H. TAYLOR; Dr H. WALTON; and Dr J. UHLER, JR.

We can only briefly state that they support by their communications the whole mass of the evidence given above. Their experience (in some very considerable) has not, in the least degree, tended to destroy their confidence in vaccination; whose preservative efficacy has been found sufficient, by a part of these gentlemen, to defend them from the contagion of small pox, though repeatedly exposed to it in their professional intercourse with the sick. Their letters are submitted, with the rest of the documents, to the disposal of the Society.

BIBLIOGRAPHICAL NOTICES.

ARTICLE XIX.—*The Eclectic and General Dispensatory: comprehending a System of Pharmacy, Materia Medica, the Formulæ of the London, Edinburgh, and Dublin Pharmacopœias, Prescriptions of many eminent Physicians, and Receipts for the most common Empirical Medicines:* Collated from the best authorities by an American Physician. Pp. 627. Philadelphia. Towar & Hogan, 1827.

This volume is a reprint of parts of several works, relating to the science of Pharmacy. Its arrangement is copied from the London Dispensatory of Mr ANTHONY TODD THOMSON, and consists of three parts and numerous appendices: the first part being entitled the *Elements of Pharmacy;* the second, *Materia Medica;* and the third, *Preparations and Compounds.* The exordium, under the head of "Elements of Pharmacy," comprising the first few paragraphs, is taken from Mr THOMSON's work. The next article, on the collection and preservation of simples, is borrowed from Dr DUNCAN's Dispensatory; while the remainder of the Elements of Pharmacy is a reprint from Mr THOMSON.

The appendix to Part I. or the Elements of Pharmacy, comprises all the matter contained in the corresponding part of the London Dispensatory, with the addition of a few tables from the Dispensatories of Drs DUNCAN and COXE.

Part II. on the Materia Medica, is printed from Mr THOMSON's Dispensatory, with a few omissions and additions. The omissions consist most generally of botanical descriptions, and the additions comprise the account of several American plants, which have been introduced into the practice of medicine.

Part III. entitled Preparations and Compounds, is also extracted from THOMSON, together with the tables of new and former names, found in the different editions of theLondon Pharmacopœia.

Of appendix No. I. to the general work, the articles "water" and "mineral" waters are taken from THOMSON. The toxicological tables are derived at second hand from Dr COXE. The article on the art of prescribing medicines is taken from Dr PARIS's Pharmacologia; the collection of prescriptions, from PEARSON's Thesaurus Medicaminum; and the articles on hydrocyanic acid, iodine, oil of croton, and wine of colchicum, as well as the table of synonymes, from THOMSON.

Appendix No. II. consists of a farrago of short articles, taken here and there from GRAY's supplement to the London Pharmacopœia, comprising notices relating to many diverse subjects; such as domestic and empirical plants and medi-

cines,—articles used in surgery,—formulæ not found in the pharmacopœias,—native vegetable alkalies,—diet used by the sick,—artificial mineral waters, &c. &c. Next follows a list of medical contractions, also copied from GRAY: and this closes the volume, with the exception of seven plates of apparatus, which, with their description, are taken from THOMSON.

Such then are the materials of which this book is composed, and from the character of the works which have been mentioned, it must be conceded that some of the best authorities relating to pharmacy have been employed. But it is not sufficient that the most valuable sources of information have been resorted to; it is not merely necessary to say to a printer, reprint fifty pages of one work, two hundred pages of a second, and one hundred of a third, in order to form a compilation. Humble as the labours of the compiler may be conceived to be, something more is evidently necessary. Thus, the matter borrowed from various sources should be well selected and carefully collated, pruned of repetitions and freed from inconsistencies. In short, the different extracts should be elaborated into something like unity of design, and the work, being rendered as homogeneous as possible, ought to be adapted to the particular wants of the class of readers for whom it is intended.

With these views of the duties of compilers and the qualities belonging to good compilations, we shall notice, with as much brevity as possible, the different parts of the work before us, testing its execution by the principles we have laid down.

In the compilation under notice, the Elements of Pharmacy are opened with several introductory paragraphs, taken, as we have already mentioned, from THOMSON, in which this part of pharmacy is stated to comprehend those general principles of chemical action which enable us to reason on the results of pharmaceutical operations; and the explanation of the operations of pharmacy, with a description of the apparatus.

In conformity with this statement of the objects comprehended under the idea of the Elements of Pharmacy, Mr THOMSON proceeds, in his Dispensatory, to treat this part of his subject under the following sections: Section I. More general agents, influencing pharmaceutical combinations. Section II. Constitutions and combinations of substances. Section III. Pharmaceutical operations and the description of the apparatus.

The definition of the Elements of Pharmacy having been adopted from THOMSON, it was natural to expect in the dispensatory before us, that the arrangement of this author would have been followed. Notwithstanding the reasonableness of this expectation, the introductory paragraphs are immediately followed by an extract from Dr DUNCAN's Dispensatory on the collection and preservation of simples, under the title of "Pharmaceutical Operations;" after which the whole of the Elements of Pharmacy of THOMSON are reprinted. The three divisions of the original work are retained; but inadvertently the second division is distinguished as section II., though there is no section I. or III. But a more material objection is, that the division marked section II. is not made to assimilate with the other two divisions by a title running through the two columns of the page. The third division is entitled, after THOMSON, "*Pharmaceutical Operations* and apparatus." As the extract from DUNCAN on the collection and preservation of simples is entitled "*Pharmaceutical Opera-*

tions," we have the incongruity of two divisions under the Elements of Pharmacy with the same title.

When a compiler avails himself largely of the labours of others, and adopts in mass considerable portions of different publications, it would seem that he is under some obligation to revise the text adopted, with a view to the correction of any errors which may have crept into the original through the fault of the author or printer. Under this impression, we think the following errors ought to have been corrected in the present work. At page 34, nitrous gas is called *protoxide* of azote, instead of *deutoxide;* and nitrous oxide, *deutoxide* of azote, instead of *protoxide*. At page 36, 100 volumes ammoniacal gas + 100 volumes carbonic acid are said to form carbonate of ammonia, whereas they form bicarbonate; and 100 volumes ammoniacal gas + 100 sulphuretted hydrogen are stated to form hydrosulphuret of ammonia, when in fact the correct proportions are 200 volumes ammoniacal gas + 100 sulphuretted hydrogen. Again, in the table at page 37, water is stated to consist of *one volume* of hydrogen + *two volumes* of oxygen, and carbonic *acid* is printed for carbonic *oxide*.

And here we may be permitted to remark, that if the American physician had used the latest edition of Mr THOMSON's Dispensatory, he might have avoided some of these errors; for though they exist in the edition of 1824, which appears to have been employed in the preparation of the present volume, they are in part corrected in that of 1826. Now, it was to be expected that the latest edition would have been employed; for independently of the advantage to be derived from using a last edition, as freer from errors of mere inadvertence, it has always been considered as judicious in a compiler to avail himself of the last modifications and additions of the author from whom he proposes to draw. If this rule had been attended to, the articles hydrocyanic acid, iodine, croton oil, wine of colchicum, &c. instead of being printed in an appendix, would have formed a part of the text of the present work; and it would probably have been enriched with the articles on "Incompatibles," "Pharmaceutical Equivalents" and "Oxalic Acid," which are among the more important additions to the new edition of THOMSON.

We have already stated, that part II. on the Materia Medica, has been borrowed from THOMSON, with slight omissions and additions. The additions consist almost exclusively of descriptions of American medicinal plants, taken, for the most part, from THATCHER and DYCKMAN; part of them inserted alphabetically, and the rest appended, under the title of "American medicines, omitted in the text." Our impression is, that this list is far from being complete.

A remarkable instance of anomalous arrangement is furnished in appendix No. I. After several pages have been copied from THOMSON on mineral waters, a set of toxicological tables are introduced, which naturally lead the reader to suppose that the article on mineral waters is finished; but what must be his surprise to find, that, after ten pages of tables on poisons are disposed of, the article on mineral waters is resumed, and now completed without further break or interruption. It was to be expected that the American physician, having determined to copy the article on mineral waters from the London Dispensatory, would have printed it continuously.

In the extract from PARIS on the art of prescribing medicines, the printer is chargeable with the rare fault of following the original too closely. Thus we have, in almost every column of this excerpt, numerical references to medical

formulæ. For example, the reader is referred to formulæ 42, 126, 127, and to formulæ 3, 4, 5, and this perhaps in twenty different places. He is also referred to particular volumes and pages. But as the American physician has not copied the formulæ, and as the volume and page indicated relate exclusively to Dr PARIS's work, it would have been better if these references had been omitted.

The selections from PEARSON's Thesaurus Medicaminum embrace many valuable formulæ. The last edition of this work, printed in 1810, followed the nomenclature of the then last editions of the British pharmacopœias. Since that time, the London and Edinburgh colleges have printed new editions of their pharmacopœias, the last edition of the London having appeared in 1824, and of the Edinburgh in 1817. It would have been an improvement, if the formulæ selected had been made to conform, in nomenclature, to the latest editions of these works.

We have already indicated GRAY's Supplement as the source from which the second appendix is derived. In the original, the articles noticed are treated of under the three heads of "organized bodies," "substances not organized," and "miscellaneous matters." "Vegetables" constitute the first division of "organic bodies," and the different plants mentioned are arranged according to the natural orders of JUSSIEU. First, we have "order I. Algæ," which are thus characterized: "Approach to an animal nature, by containing much nitrogen; none are poisonous." Then follow a number of plants belonging to this order, and among the rest, the "mousse de Corse." This order being completed, we next have, in the parent work, the "fungi" as the second order. The characters of the plants which it embraces are thus enumerated: "Frequently poisonous: the best remedy in this case, after immediate vomiting by tickling the fauces, and the exhibition of clysters, is æther ʒi. in a glass of water. The Russians, however, eat almost every species that are of any size, only stewing them thoroughly, and drinking a glass of brandy after them: and the ancients stewed suspected mushrooms with some twigs of the pear-tree, as an antidote to their bad effects."

In the extracts from GRAY for the Eclectic Dispensatory, none of the divisions of the original work are preserved. Accordingly, the articles adopted from the class of vegetables are inserted without distinction into orders. Of the plants, included under the order Algæ by GRAY, only one is adopted in the dispensatory before us; namely, the "mousse de Corse." No general characters of the algæ are given; but by a strange mistake, the paragraph detailing the general properties of the *fungi* is made immediately to follow the description of the "mousse de Corse," and that too, without prefixing the title "fungi." By this arrangement of the original text, the "mousse de Corse," which, as one of the algæ, is expressly stated not to be poisonous, is made to appear so by the application to it of the general characters of the fungi.

The same evidences of haste are evinced in the selections from GRAY, as in those from PARIS. At page 592 we have the following words: "Clematis erecta, as caustic and burning as the former." It would puzzle the reader to extract any meaning from this statement; for if he refer to "the former" article, he has an account of the "white pariera brava," which has no caustic properties whatever. But the whole difficulty is solved by reference to GRAY, where we find the article "clematis erecta," preceded by a description of the "wild travellers-joy," the bark and herb of which are stated to be "caustic, raising

blisters." Again, in extracting the article "alconorque," reference is made, as in the original work, to orders 154 and 42, though no distinctions of orders have been preserved by the American compiler.

We do not pretend to blame the preparer of the Eclectic Dispensatory, for not having followed the classification of GRAY, in the articles which he has borrowed. The arrangement of this writer is lame and imperfect, and were it otherwise, the excerpts are so much scattered as to render any classification nearly impossible. Nevertheless, it was to be expected that the matter adopted would have been diligently revised, in order to free it from references to divisions which have not been preserved, and to contexts which are nowhere to be found.

Perhaps we have said enough to give our readers an idea of the character of the Eclectic Dispensatory; but before we close this article, we feel disposed to make some observations on the compilation as a whole. In the class of works to which Dispensatories belong, we expect compilation; but the materials should be skilfully wrought, and made to exhibit, as a whole, something of unity of purpose. We would even concede, that the writings of foreigners are fair game; and that booksellers may print them in part or in whole, or make up a volume from portions of different books, just as it suits their fancy, or accords with the suggestions of interest. But is there not an obligation somewhere, that the materials of the compilation should be so modified, as to be adapted to the country in which it is printed, and the wants of the class of readers for whom it is designed? Or if it be determined to make a mere reprint from several authors, is it not proper to indicate to the reader, who it is that addresses him, and to what country he belongs? In the present instance, a Dispensatory is compiled by "an American physician," purporting to be collated from the best authorities. Who then is meant by the personal pronoun "I?" Is the reader bound to know that "I" means ANTHONY TODD THOMSON in the first 500 pages, and JOHN AYRTON PARIS from page 506 to page 545? Numerous statements of facts and opinions are made in different parts of the compilation, and is it certain that the reader will know what portion of them rests on the authority of DUNCAN, what on PEARSON, and what on GRAY? A knowledge of authorities is often important to determine the degree of dependence which may be placed on assertions. In illustration of this position, we may remark, in relation to the last mentioned writer, that the composition of his supplement is sufficient to shew, that he is a person of no respectability, and therefore not to be trusted as an accurate and veracious writer.

Let us next inquire, whether any pains have been taken to adapt the compilation under notice to the wants of the American practitioner. We have already mentioned, that by far the greater part of the work is borrowed from the London Dispensatory. In the English work, England is constantly indicated by the expression "this country," and America is as constantly alluded to as a foreign country. By the adoption of the same phraseology in the American work, "this country" means England, and foreign countries mean the United States, and all the rest of the world besides except England. Thus, at page 163, the stramonium is stated to be "a native of America, but is now naturalized in this country." Again, at page 187 it is said that "the greater part of the quicksilver which is used in *this country*, is brought from Germany in leathern skins." At page 218, we are informed in the article on tobacco, that "the cultivation of it for

the purposes of trade has been long prohibited; and *this country*, as well as the greater part of Europe, is chiefly supplied from Virginia."

The Dispensatory under notice is stated to be eclectic, and to be collated from the best authorities. *Eclectic* implies choice, with the exercise of judgment; *to collate* means to compare, with a view to harmonize the objects of comparison. How far the present publication possesses the qualities implied in these terms, is left to the judgment of the reader.

ARTICLE XX.—*Dissertation sur la Non-Réunion de quelques Fractures, et en particulier de celle du bras, et sur un moyen nouveau de guérir les fausses articulations qui en resultent.* Presentée, &c. par J. B. LA ROCHE, Ancien Chirurgien de premiere classe aux Armées, et Chirurgien major de l'Hôpital Militaire d'Huningue, &c. A Paris, 1805.

Dissertation on the Non-Reunion of certain Fractures, and on a new Method of curing false Articulations. By J. B. LA ROCHE, Surgeon, &c.

This thesis has already attracted some attention among us, and been at various times the subject of conversation, from its singular blunders with regard to Dr PHYSICK's name, as well as from the comparison which it institutes between his rational and successful experiment and the conjecture of an honoured friend of the author. We therefore conclude that a notice of it will be not without interest to our subscribers.

Dr LA ROCHE gives us a sketch, in the manner so usual with writers, of the ancient history and modes of treatment of ununited fractures. He then describes at some length the operation of Mr WHITE; which, severe and hazardous as it is, is regarded by him, not without justice, as being, till a recent day, the only resort of surgeons in these unfortunate cases. The main object, however, of his thesis is the operation of Dr PHYSICK. M. L. congratulates himself and the unhappy patient upon the existence of a discovery by which, with far less risk and suffering, the purpose can be effectually answered. He proceeds to narrate the case, as given by Dr PHYSICK, or, we should rather say, as translated by his friend, Dr GAILLARDOT, of St Domingo. We conceive an abstract of the case to be well worth republication; but instead of the honest but oddly erroneous translation, we will betake ourselves to the original, in the New York Medical Repository, Hexade II. Vol. I. No. 26.

Isaac Patterson, a seaman, aged twenty-eight years, fractured his arm, April 11th, 1801, while on board ship; the accident being occasioned by a heavy sea breaking over the vessel. The next day, the captain and mate bound it up in splints; and in three weeks he arrived at Alexandria, D. C.; without having suffered any pain or observed any swelling. A physician, at that place, informed him that the ends of the bone were not in a proper situation; and after making extension, the splints and bandages were again applied. He remained in Alexandria four months; when, finding his arm no stronger, he left off all dressings, and

went on board the New York frigate, as steward. In this capacity he remained near the Federal city six months; and, being obliged to use his arm, he found the place of fracture grow more and more flexible, until, at length, it became as free in its motions as a natural joint. From the frigate he went to Baltimore; where his arm was kept in a state of permanent extension for two months.

On his arrival at Philadelphia, Dr PHYSICK found the humerus fractured about two and a half inches above the elbow joint; and that the ends of the bones had passed each other about an inch; the lower fragment being on the outside of the superior portion. By forcible extension, the lower end might be pulled downwards to a considerable extent, but not so far as to bring the fractured ends to the same level.

The patient entered the Pennsylvania Hospital in May 1802; but, in consequence of the heat, and a dangerous attack of fever, the operation was postponed till the 18th of December.

The arm was moderately extended, so as to approximate the ends of the fragments; and a seton-needle, armed with a skein of silk, was passed as nearly as possible between them. Some lint and a pledget were then applied to each of the orifices produced; and the whole secured by a roller. The patient suffered very little pain.

In a few days, an inflammation of no great severity was followed by an equally moderate suppuration. The arm was now again extended, and splints applied. The dressings were renewed daily for twelve weeks; during which time no improvement was perceived: soon after this period, however, stiffness, and pain on flexure, were distinctly noticed, and the bony union went on rapidly. On the 4th of May 1803, four months and sixteen days after the operation, and between seven and eight weeks from the first discovery of commencing union, the arm was so far recovered, that it could be turned in all directions as freely as before the accident happened. The seton was now removed; and the sores occasioned by it healed in a few days. On the 28th of May he was discharged; and Dr PHYSICK subsequently received repeated assurances from him, that his arm was as strong as it had ever been.

The above narrative is given in the thesis with tolerable fairness in a scientific point of view, and evidently with an honest intention. The object of the writer is to set this new operation in the strongest light, as the blessing to humanity which it really is. In this Dr L. acts as a philanthropist and deserves praise. He is also evidently a man of practical experience, and has seen surgery before he offered this thesis to the faculty of Paris. At the same time we think the translator really deserves a serious censure, at least if the errors of the narrative are chargeable to him; as more care is surely to be demanded in translating papers of scientific importance. We may smile at recognizing "*New Yorck*" in its queer Dutch-French dress, and may require a few minutes to "guess" out Washington under the disguise of "*Podéralcity*"; but it really seems hardly possible to conceive the process by which the name of our venerated preceptor could be, "de bonne foi," transformed into "Monsieur le docteur Philippe S. . . . . medecin et chirurgien dans les Etats-Unis"!! Certainly, where a man's publications are fit objects for translation and analysis, his name is worthy of being correctly spelled. And our national pride will hardly permit us to believe that "M. GAILLARDOT, médecin, revenant de St Domingue," could be ignorant of the name and standing of his author—

"Whom not to know, argues yourself unknown;"

however, this might have been the case with the surgeon to Bonaparte's armies in Germany. The blunder resembles others of a similar character which we have occasionally seen in notices of the early labours of the Philadelphia Academy of Natural Sciences; where the same name, since then we hope more firmly impressed on the memories of the analysts, was spelt in two or three ways in different parts of the same volume. That this mistaking of Dr PHYSICK's name is intentional, we are far from being prepared to think; but we will aver, that it would be about as correct and as neat in phraseology, to term the venerable CHAUSSIER a cobbler, to style the greatest medical genius of the age, Mons. F. J. V. . . . . brush-maker,—and founder of the school of physiological medicine, or to call M. GAILLARDOT himself a *ghost* from St Domingo.

M. LA ROCHE proceeds, in terms of warm affection and regret, to mention an operation performed by his late superior, the principal surgeon of the army of the Rhine; in which the latter passed a seton through the cicatrices of a gun-shot fracture of the thigh; the duration of the case not given, to facilitate the isolation and separation of the dead scales of bone, and at the same time, in the hope that "it would excite the divided surfaces, and perhaps at length bring on their adhesion and conglutination." The event was prosperous, and the patient could walk without crutches in two months. "Why," says our author, "did I not then understand him better? And must it be that my ancient chief, most generally too indifferent with regard to his surgical reputation and the fortune of his discoveries, has left this to be made and the honour enjoyed by Dr PHILIP S. . . . . instead of securing the claim and the priority to the surgery of France?"

This little ebullition, the result of an attachment to his friend and preceptor which does honour to the heart of the writer, proves nothing with regard to the subject of his regret. Nor could the surgeon to whom he alludes have anticipated Dr PHYSICK, had he been never so avaricious of laurels. The operation of the latter was performed in the Pennsylvania Hospital, December 18, 1802: the French entered Augsburgh, under the emperor Napoleon, at no earlier period than the summer of 1805; at which time we presume the operation described by Dr L. was performed; as, although he does not give the *date*, he states it to have been done by the surgeon-general of the army of the Rhine, while in that city. We see, therefore, no foundation for any claim of priority, were even the attempt made; unless, indeed, it be at the sacrifice of truth;—a thing of which, though there have been repeated instances of the occurrence in more countries than one, we judge the author of this thesis incapable. Indeed he introduces the operation, with becoming candour, as "altogether new, and as yet unheard of among French surgeons"—"toute recente, et encore inoute parmi les chirurgiens Francais." We will therefore close by remarking that, as our nation is thought somewhat to resemble the French in the ardent desire for celebrity evinced by so many of its citizens; a property of this kind, wherever placed, ought to be particularly respected by those who ascribe to it so high a value. The love of praise has often been found the most powerful stimulus to medical improvement; and it is only when this is pushed to an injurious degree, that it becomes necessary to check the feeling, by recollecting that the legitimate object of our profession is not glory, but the good work of healing the sick.

If, however, the desire of renown be too strong for philosophy, and our author

be still disposed to indulge in regrets that an eminent surgeon whom he knew was anticipated by one with whom he was not acquainted, we can at least offer him the consolation that his friend and preceptor need not be at all ashamed of the individual who has been beforehand with him; and we may couch the "solatia victis" nearly in the words of Virgil:

> Hôc tamen, infelix, miseram solabere sortem;
> Æneæ magni dextrâ cadis.

ARTICLE XXI.—*Transactions of the Medical Society of the State of New York, for the year* 1828; *with the Annual Address by* T. ROMEYN BECK, M.D. *President of the Society*. Pp. 54.

The Medical Society of the state of New York, especially since the passage of the new law in 1827, appears to be one of the most efficient bodies yet organized in our country, being established and supported by the legislature of the state, and having a body of laws generally excellent and which appear to be enforced. Every county has its incorporated medical society, to which every practising physician in such county must belong, or be liable to all the legal penalties relative to unlicensed physicians. These local societies exercise a medical police, under the sanction, and by the assistance, of the civil power, over its own members. Delegates from each county society, in unison with certain permanent and honorary members, form the State Medical Society, to meet annually, on the first Tuesday in February, at the capital city, Albany. The bye-laws of the county medical societies must not be repugnant to the laws of the State Society. The following regulations, as established by law, or by the State Society (which last have all the force of law), are of general interest.

The regular term for medical studies is four years, except when the student has attended a course of lectures in a medical college, or had a liberal education at a college in the state. To practice physic, a license or diploma is required from one of the county societies, or the degree of Doctor in Medicine from the regents of the University: or as regards strangers, a certificate or diploma, agreeably to the laws of the state or country to which the candidate belongs, which certificate or diploma must be filed with the clerk of the county. The colleges of the state have no authority to grant licences, or the degree of M.D. This last can only be granted by the regents of the University, who are appointed by the legislature, and to whom the candidates for the doctorate are recommended by the county or state societies, or by the trustees and professors of the incorporated colleges of the state. To them also belongs the appointment of these trustees and professors, so that the regents have authority over all the scientific and medical institutions of the state, and yet cannot act, but through the medium of subordinate bodies, while they themselves are responsible to the

legislature and the people. The whole is a system of checks and balances in imitation of the co nstitution of our country.

Among the bye-laws of the State Society, operative on all the county sôcieties, we remark that the following declaration must be signed by every candidate for a licence or diploma, before he is authorized to practice medicine or surgery.

"I, A. B. do solemnly declare, that I will honestly, virtuously and chastely conduct myself in the practice of physic and surgery, with the privileges of exercising which profession I am now to be invested; and that I will with fidelity and honour do every thing in my power for the benefit of the sick committed to my charge." p. 24.

Another regulation should also be noticed.

"That any member of the said society, who may be convicted of any serious offence against the laws of this state, or of the United States, or who may be guilty of gross immorality, or who shall have improper pretensions to any specific or nostrum, or who shall be repeatedly guilty of improper conduct in the duties of his profession, or his behaviour in this society, may be expelled at any anniversary meeting of this society, upon a vote of two-thirds of the members present." p. 27.

The pamphlet before us contains the transactions of the State Society at its annual meeting in February last; together with the annual address of their learned president, Dr T. Romeyn Beck. Of the former, the following are worthy of record and of general diffusion.

"Whereas Dr Benjamin Waterhouse has lent his name in support of, and in sanctioning the empirical practice of Samuel Thomson: therefore,

"*Resolved unanimously*, That the name of Benjamin Waterhouse be stricken from the list of honorary members of this society." p. 6.

Several resolutions on the subject of the increasing evil of intemperance were adopted, declaring, that the habitual use of ardent spirits is productive of weakness and disease and not of strength and vigour: that it is never a preventive of disease, but often predisposes to complaints of a severe character: that the society will discourage the intemperate use of ardent spirits, as far as their influence and example will extend, &c. p. 12.

The importance of improving medical education, and of adopting throughout the United States a uniform system of instruction, has for some time past occupied the attention of the profession. Reference to the fourth volume of this Journal, p. 204, will exhibit the resolutions of the Northampton Medical Convention, which, it is believed, are becoming operative in the eastern states. A national system is, however, desirable, and the New York State Society, at the suggestion of the faculty of Bowdoin College, Maine, have recommended the calling of "a national convention, consisting of a delegate from each of the regular medical colleges and state medical societies, to meet at Philadelphia on the first Tuesday in May next, for the purpose of suggesting and recommending for adoption, so far as is consistent with the laws of the several states, a more uniform system of medical education than now prevails." Dr T. Romeyn Beck has been appointed the delegate on the part of said society. We hope, that this effort will be met with the liberality which it so eminently deserves. Sectional interests and jealousies should be forgotten.

The annual address, from the accomplished and talented author of the Elements of Medical Jurisprudence, on the subject of *Medical Evidence*, is worthy

of the writer, and of course, interesting and valuable. After stating the importance of his theme and the necessity which exists and is usually recognized, that medical men should be consulted in every case of violent death, the author observes that it becomes an interesting question, how this principle shall be best exercised for the furtherance of the ends of justice—in punishing the guilty and preserving the innocent—how the obstacles to its proper knowledge shall be best obviated—and how the difficulties that attend its execution may be lessened or removed.

In cases of violent death, what are the duties of professional witnesses, first before the coroner's jury and secondly before the court and jury? Facts are chiefly to be elicited in the one case—opinions as well as facts in the second. The physician is to satisfy himself as to the *cause of death*—and may therefore, and *always* should, demand a dissection of the body, or as an alternative deny his testimony. A knowledge of anatomy—healthy and morbid, and in cases of poisoning, of chemistry, is hence absolutely necessary. The author from this statement very candidly draws an inference which none should be ashamed to admit, that few, very few are fully prepared to give evidence in cases of violent death. The physician in extensive practice has little time, and in the country, still less opportunity of acquiring or even of keeping up, a knowledge of the minutiæ of anatomy or chemistry, and there can be no doubt that "*a man may be a judicious, correct and excellent practitioner of medicine, and yet not competent as a witness*," and hence a fair reputation and great excellence are often tarnished unjustly by the inquiries of the bar and the court. Hence, Dr Beck recommends the appointment of medical men who shall be specially charged with this duty, and who would then qualify themselves for the task. The welfare of the community, the cause of justice and of innocence, as well as the interests of the profession, would in this way be alike promoted. This practice is not novel; it was adopted in 1532 by the Emperor Charles the Fifth,—and in 1662 by Henry the Fourth of France, and is now the general custom on the continent of Europe.

Under existing circumstances dissections and chemical examinations should be made by two or more physicians, who will thus have the benefit of each other's advice and assistance; the more important, as the happiness, reputation and life of an individual often rest on the opinion given by the medical witness. When the physician is cited before the court his situation is more difficult—he must state the facts, the opinion deduced from those facts and the reasons for that opinion. He has often to defend his opinions from the objections of other medical witnesses, and especially from the severe and minute scrutiny by the gentlemen of the bar. The facts should be stated in as plain and perspicuous language as is consistent with precision and accuracy. "The doctrine founded on the facts should next be mentioned in an unequivocal manner, so as at once to evince the decided belief of the individual in it, and the reasons on which it is established," that thus no room,—or as little as possible, may be allowed for cavilling, and that opinions should not be hastily advanced or abandoned. The mischievous effects of such fluctuations of opinion, the author ably illustrates under the two heads of Infanticide and Insanity—our space will not allow us to follow him.

The delicacy of the physician's situation is enhanced by the circumstances under which he is placed—he is summoned by *one* party—and his evidence is

expected to corroborate one side and to impugn the other. He should however always declare the *whole truth*, even if not questioned to that extent, and should endeavour to guard against all impatience or irritation from the technicalities of an examination—often rendered more perplexing by an adverse counsel. To avoid these difficulties, our author suggests that a written report be presented as the medical facts in the case, which can be deliberately prepared—where doubts can be stated and the favourable or unfavourable circumstances mentioned. He can thus avoid all imputations of being a partisan.

It is well known that physicians too often disagree in *opinion*, in courts of justice, as to the bearing of certain facts and as to the deductions to be drawn from them. This generally arises from the delivery of the testimony, *viva voce:* the opinion is delivered immediately, before the connection and bearing of facts, &c. can be examined. Often the discrepancy arises from the want of knowledge in one witness. *One is ignorant in comparison with the other.* Written reports would greatly obviate both of these sources of disagreement.

When however a difference actually exists the rule of law is applicable. "When a witness," says STARKIE, "testifies to a fact, which is wholly or partially the result of reason upon particular circumstances, it is obvious that the reasons of the witness for drawing that conclusion are of the most essential importance, for the purpose of ascertaining whether the conclusion was a correct one. And these observations apply with peculiar force to all questions of skill and science." Agreeably to this rule, all practitioners are not proper witnesses in all cases—sometimes an anatomist may be required; sometimes a chemist; or a physician; or a surgeon: for even a HUNTER had cause to regret that he had not given the subject of poisons more attention before he ventured an opinion in a court of justice.

Personal experience however not being always adequate, it is necessary and proper that *authorities* should be adduced and received. This privilege is accorded in our country and in England—although sometimes opposed: but, as observed by Dr CRELL, reading as well as experience makes a physician, neither is there "any reason why I should not quote the fathers of my profession in this case, as well as you gentlemen of the long robe quote Coke upon Littleton in others." We hope this example will be followed, and that the members of the medical profession will learn what is due to themselves and to their science, and be always prepared for defending those opinions which have been deliberately advanced. They cannot avoid the expression of *an opinion*, as has been supposed, without the appearance of ignorance, and unfortunately, they may be often cited in support of sentiments which they do not hold, for "a dexterous advocate," says Mr SMITH, "has a great advantage over any witness however learned and self possessed. He may be led into a train of admissions, the inferences from which are afterwards to be turned against him;" yet, by attending to the rules already given—especially by suitably preparing himself for such examinations and by a decorous respect to the opinions of his brethren and to the formalities of the court, the physician will always honour and exalt his profession, and thus publicly demonstrate the benevolent tendencies of a science devoted to the alleviation and destruction of human misery.

QUARTERLY SUMMARY

OF MEDICAL AND SURGICAL INTELLIGENCE.

I. ANATOMY.

1. *Organization and Use of the Spleen.*—In the Journal des Progrès, tome vi., is published a note from JULES ARTHAUD, which contains the following statement.

"Some months since, I was informed by M. STRAUZ, a naturalist, whose candour and intelligence are generally acknowledged, that in 1817 he examined, in the elephant which died at the Garden of Plants, by the aid of the microscope, the bands composing the fibrous net work of the spleen, and that he was not able to recognize in them the distinctive characters of the fibrous or vascular tissues. He opened many of these bands, of which a great number were a half line in diameter, and so far from finding them pierced by a canal, as he had presumed was the case, to his great astonishment, he discovered that they were filled with a pulpy substance, in all respects similar to the nervous pulp. This anatomical examination induced him to believe, that the spleen was a nervous plexus dependant upon the ganglionic system of the viscera: occupations of another species did not permit him to continue the examination of this important point. I have, however, made some researches to assure myself of the fact announced by M. STRAUZ, and the following are the results at which I have arrived.

"1. In the vertebral animals, the existence of the spleen is always connected with that of the nervous system.

"2. In the fœtus the spleen does not distinctly appear, until during the second month of pregnancy—the very period at which the ganglionic system of the human fœtus is first perceived.

"3. The spleen follows all the modifications impressed upon the nervous system by difference of age, the degradation of the inferior animals, and monstrosities.

"4. In genuine cases of acephali, the absence of the spleen is a constant fact.

"5. Those substances which stimulate especially the nervous system of organic life, act very powerfully upon the spleen, which becomes tumefied under their influence.

"6. The tissue of the spleen, which I have termed nervous, preserves, in a bath of pure water, the density which it had previously acquired by immersion in a mixture of seven parts of water and one of nitric acid; whereas the vessels which enter into the composition of the spleen soften and become putrid. To make this experiment it is necessary, first, to detach the fibrous envelope of the spleen, and by repeated washings to remove the blood deposited within the spongy structure of the organ.

"7. Numerous facts enable me to refer to an alteration of the spleen, an order of intermittent fevers already considered, by distinguished physicians, as appertaining to the class of neuroses.

"Finally, I believe that I am able to demonstrate, by experiment, and by facts drawn from comparative anatomy, that the spleen is nothing else than an *electric apparatus*, causing the blood to undergo a certain modification, the nature of which I shall make known in a memoir upon the spleen, which I propose to read very shortly to the Institute, and in which I shall give the outlines of a new theory of the functions of the nervous system."

2. *Hair.*—Heretofore, observes M. CUVIER, in a memoir read to the *Royal Institute of France*, at its sitting of the 8th September 1827, the hair has not occupied, in our classifications of the tissues of the body, that rank which appertains to it. It does not, as has generally been supposed, constitute an essential part of the skin; it has an independent existence and appertains to a system of organs, as remarkable, frequently, for its complication as for its development. This system may be associated with the cutis, and develope itself at different points within its substance; but even then it is not confounded with it, but preserves its distinct character. M. CUVIER considers the organic system by which the hair is produced as analogous to that of the *senses*, and even as constituting a part of the latter: the hair in a great number of animals being a very delicate organ of touch.—*Nouv. Biblioth. Med. Nov.* 1827.

3. *Structure of the Biliary Ducts.*—According to M. AMUSSAT there exist, in the parietes of the gall bladder and biliary canals, fleshy fibres; and in the cystic canal a spiral valve, the effect of which is, to cause the bile of the hepatic duct to ascend into the gall bladder, and to oppose the too sudden discharge of the cystic bile; the termination in a cone of the ductus choledochus, and its very contracted opening into the duodenum, favour this effect: finally, the duct of the pancreas opens always into the ductus choledochus, and not into the duodenum.—*Journ. Univer. des Scien. Med. Oct.* 1827.

4. *The Existence of a Canal in the Optic Nerve of the Human Fœtus.*—In the *Journ. für Chirurg. u. Angenheil*, Dr WEDEMEYER states, that he has observed successively, in many fœtuses of from four to seven months, that upon pressing slightly the globe of the eye, he caused to issue from the optic nerve, cut transversely, a portion of the vitreous humour. He also believes, that he has seen, in the centre of the nerve, an opening, indicated by a black point (the central artery?) and in some subjects a similar opening has appeared to him to exist on the surface of the retina. M. TREVIRANUS, to whom this observation was communicated, suspected that the pretended canal may have been artificially produced by the pressure applied in the experiment. Dr W. having, however, since repeated his observations, he submits them to the further researches of anatomists, in order that the question may be thus definitively decided. To perform the experiment, the eye of the fœtus, of from four to seven months, is to be selected: earlier, the optic nerve is too soft to permit the examination to be properly performed, and beyond this period, the canal, he suspects, will have been already obliterated.—*Bulletin des Scienc. Médicales, Sept.* 1827.

5. *Heart Exterior to the cavity of the Thorax.*—In the November number of the *Medical Repository*, Mr TUCKER relates the case of a fœtal monster, which led to no little embarrassment during delivery. On an examination of the mother per vaginam, there was found presenting, "a large fleshy tumour, of the shape of a heart, possessing a pulsatory motion, or a regular *systole* and *diastole*. I could not help concluding," observes Mr T. "that this organ was actually in the vagina. I also imagined that I could distinguish the auricles, and the larger vessels attached to the ventricles." Delivery was effected by turning, when to the operator's great surprize, what he had hardly been able to conceive could be *a heart presentation*, turned out to be so in reality! The fœtus appeared to be full grown, and there being a division throughout the chest and abdomen, the whole

contents of the two cavities were exposed to view. The display of the thoracic viscera arose from a separation through the median line of the sternum, which extended to the pubes; the edges of the recti muscles were reverted, as it were, and faced with a white, tendinous border. But the deviations did not end here. The right hand exhibited but one finger, and the left foot but one toe. *The umbilical cord made its exit on the back, between the scapulæ.*

Immediately on delivery, the child cried lustily, and lived two hours, during the greater part of which time Mr T. states that he had the heart in his hand, "and witnessed the vena cava returning the blood to the right side, and its reception on the left from the pulmonary veins. The aorta and pulmonary artery were also both distinctly seen, together with their actions." As all the abdominal viscera were out of the cavity, by simply turning them aside the descending aorta and the ascending cava were brought into view.—*Lon. Med. and Phys. Journ. Dec.* 1827.

6. *Malformation of the Œsophagus.*—Professor Rossi reports the case of an infant in which the œsophagus was completely closed above its cardiac orifice by a transverse membrane, the circumference of which adhered to the parietes of the canal. The infant lived near three days;—it had voided at several intervals meconium, but vomited every thing that it was caused to swallow.—*Archiv. General. de Medecine, Oct.* 1825.

7. *Malformation of the Bronchiæ with Closure of the Glottis.*—The same gentleman reports a case in which the glottis was completely closed by an accidental membrane; while the bronchiæ were obliterated at their origin by a cartilaginous septum placed transversely. This infant lived for some time after its birth, but with all the symptoms of asphyxia. During its life the movements of the heart and arteries were distinctly felt. The communication between the two auricles, of a very large size, remained free, and the fœtal circulation, thus continuing after birth, explains why the child was able to live for some time, and perform various movements of the limbs and lips.—*Ibid.*

8. *Transposition of the Ventricles of the Heart.*—M. Duges communicated to *the Academy of Sciences*, at its sitting of September 10, 1827, the following interesting case. In August preceding, there was brought to the hospital "*des Enfans trouvés*" of Montpellier, an infant, the whole surface of which presented a deep blue colour. It was supposed to have been about four or five days old—it died in a few hours from its reception into the hospital. After death the body, exteriorly, was of a deep violet hue. The only morbid appearance within the cranium was a considerable injection of the arachnoid membrane. In the thorax, the lungs were injected, but otherwise sound; a viscid yellowish serum was effused within the pericardium. The surface of the heart was of a violet colour. The abdominal viscera were found adhering together by means of a false membrane, yellow, soft, and floculent—the liver was of a brownish colour and engorged with black blood. On examining the structure of the heart, the auricles were found to be filled with blood, and preserving their natural situation and relations; their orifices were in their ordinary condition; but the ventricles were transposed, so that the left auricle corresponded to the right ventricle, which gave origin as usual to the pulmonary artery; and the right auricle to the left ventricle, into which opened the aorta and coronary arteries. In consequence of this condition of parts, the blood brought by the venæ cavæ to the right auricle was thrown by the corresponding ventricle into the aorta, which hence distributed, to the different portions of the system, venous in place of arterial blood; while the blood brought by the pulmonary veins to the left auricle was returned again immediately to the lungs by the corresponding ventricle and pulmonary artery. The ductus arteriosus was too imperfectly developed to remedy completely the consequences necessarily attendant upon such a malformation of the circulatory organ. M. Duges has found in authors only three examples of a similar deviation from the ordinary structure; these are all reported by Meckel in his "Re-

cherches sur les Vices de Conformation du Cœur."—*Journ. Gen. de Medecine, Oct.* 1827.

II. PHYSIOLOGY.

9. *Section of the Pneumo-Gastric Nerves.*—It being satisfactorily ascertained that a section of the eighth pair of nerves, on both sides, destroys the animal in a few hours, by paralyzing the muscles about the larynx, and thus causing asphyxia; we cannot properly determine, when death is thus produced, the real effects of the interruption of the nervous influence on the stomach, lungs, and other organs. M. DUPUY, of the Veterinary School at Alfert, in his expements, opens the trachea of the horse, by which means the animal is made to live from fifty to sixty hours. This gentleman has laid some of his experiments lately before the Medical Society of Paris, in which the effects of the pneumo-gastric section are shewn. The nerves were divided on both sides of a horse's neck, and portions cut out. Tracheotomy was then immediately performed. The animal was carefully examined at certain periods, and also bled before and after the operation, in order to ascertain the effects of the section upon the blood as well as on various functions. Two hours after the section, the functions of respiration, circulation, &c. presented no alteration. The animal continued to eat as before. In four hours, the breathing was accelerated—the blood of the carotid was now of a darker colour than before—the animal ate and drank, but deglutition seemed to be performed by a convulsive action, and liquids returned by the wound in the trachea. At the end of sixteen hours, the breathing was slow and deep—much mucus flowed from the wound in the trachea, and the food returned by the same aperture—the action of the heart is much weakened—the arterial blood is now nearly as dark as venous. At the end of twenty-eight hours, no material change had occurred. Forty hours from the operation, the animal had great difficulty in swallowing—the blood from an artery was quite black—the œsophagus was felt to be crammed with food—and the horse was comatose. In fifty-two hours, the breathing was stertorous, and he soon died. *Dissection.*—Nothing remarkable in the brain. All the parts forming the aperture in the larynx were red and swelled, so that the passage was almost closed. The mucous membrane of the larynx and trachea was red, and otherwise discoloured, but these were considered to be cadaveric phenomena. The lungs were inflamed and hepatized—the bronchiæ filled with mucosities. The substance of the heart was much softened, and its cavities filled with black blood. The œsophagus, as well as the pharynx and nasal cavities, was filled with alimentary matters. The stomach was distended with food almost dry, and adherent to the mucous membrane of the organ, which was of a red colour. No chyme existed in any part of the intestines. The liver was enlarged—and there were several large black spots on the spleen. From the above and other similar experiments, it is evident that section of the pneumo-gastric nerves stops the sanguifactive (arterializing) process in the lungs—paralyzes the œsophagus—and puts an end to the secretion of gastric juice, and, consequently to digestion, in the stomach. The experimenter found, in this and several other cases, that a peculiar effect is produced on the spleen by these operations—namely, that its blood is changed, and *capable of producing a disease* in other animals, when introduced by a puncture, which affects their spleens and causes death. The same was found to be the case with the spleens of animals living in marshy countries where intermittents prevail.—*Medico-Chirurg. Review, January* 1828.

10. *Regeneration of Nervous Tissue.*—M. PREVOST in 1825 divided, in five new born kittens, the left pneumo-gastric nerve, removing in each case a portion of the nerve about six millimétres in extent. The animals did not appear to be affected by the operation, and the wounds healed very rapidly. A month subsequently, he divided in one of the kittens the right pneumo-gastric nerve. The

animal appeared to suffer; it frequently gaped and uttered a hoarse cry. Respiration was slow and impeded, and in about fifteen hours after the operation death took place. The two ends of the nerve, divided a month previously, were swollen, directed towards each other, and the intermediate space was filled up with a white tissue nearly similar to thickened and disfigured neurilema. This tissue, it appeared, did not transmit the nervous influence. A month after, the right pneumo-gastric nerve was divided in another of the kittens, and in thirty-six hours after the experiment the animal died. The circumstances of the nerve of the left side were similar in this case to the last. Two months later, the operation was performed on a third kitten now four months old; it was but little affected, and two days after was quite well. M. PREVOST operated next on a fourth kitten, the only one remaining, the fifth having been destroyed accidentally; the experiment was marked by the same result as in the third instance. After fifteen days, the *right* nerve was again divided in the first of the two surviving cats, immediately above the situation of the previous incision. The animal bore the operation well,—respiration was not impeded. Thirty-six hours after, the nerve of the left side was again divided, immediately above the first section; in about thirty hours the animal died, as though both nerves had been divided at the same time. In examining by dissection the divided trunks, M. PREVOST found that the upper and lower extremities of the left nerves were united in both animals by a white hard substance or swelling, on which the neurilema appeared to be thickened. On removing the neurilema, and pressing the remainder between two plates of glass, he observed, by placing it beneath a microscope, that from the superior trunk nervous filaments extended, through the interposed substance, to the inferior trunk; thus indicating that the integrity of the nervous tissue was restored. In the recent cicatrices, he could not discover any of these nervous filaments. From the foregoing facts, M. PREVOST deduces the following conclusions.

1. When a nerve has been divided, it is not sufficient for the restoration of its action, that the two portions be united by a white, cellular, interposed tissue, for this soon takes place.

2. It is necessary, that through this uniting substance nervous filaments should shoot out, and extend from the superior to the inferior portion.

3. This prolongation of nervous matter does not appear to take place until after some considerable time. The prolongations are not arranged in close contact as in the natural continuity of the nerves; but on the contrary, they separate from each other, as though their passage through the interposed substance had been made with difficulty.—*Bulletin des Scien. Med. Sept.* 1827.

11. *Respiration of the Infant when only the Head is born.*—There is a memoir upon this subject, contained in one of the numbers of "*Gemeins. deutsche Zeitschrift für Geburstkunde*" for 1827, by professor RITGEN. Causing the mother to lie upon her side at the moment when the head of the infant is about to pass out of the vulva, he observes, that "when the head is born and a new contraction of the uterus is about to take place, the thorax of the infant will be seen forcibly to elevate itself, while the mouth and neck will present the movements of a first respiration, which latter may become even sensible to the ear. When the uterus commences to contract upon the fœtus, inspiration ceases, and the air inspired is expelled. If the fœtus is not born during the contraction, the inspiration is invariably repeated with similar efforts: the same takes place if the contractions of the uterus cease for a certain time; and most generally in this case it is also followed by a somewhat noisy expiration, and frequently very distinct cries are heard. Occasionally the eye-lids open and close, especially under the impression of a vivid light. There are, however, many modifications of these phenomena in different cases."

If the foregoing statements be correct, our readers will easily perceive their great importance in reference to medical jurisprudence; for it will then be evident that an infant may have respired when only the head has passed out at the vulva, and yet before the trunk is expelled, may perish of asphyxia, without the

mother being in any manner accessary to its death. Death by asphyxia may under such circumstances be occasioned in different ways: by the introduction into the infant's mouth of foreign matters, as blood, the liquor amnii, fæces, &c. or by any mechanical obstacle preventing the continuance of respiration.—*Bulletin des Scien. Med. Sep.* 1827.

III. PATHOLOGY.

12. *Phlegmasia dolens.*—Dr M. ALLONEAU, of Thouars in France, has offered for the Athenæum of Medicine a paper on the above mentioned disease, which appears in a bulletin of that body, inserted in the Nouvelle Bibliothèque Médicale for November, and is followed by a regular report on the memoir, by M. GOUPIL, the author of "Exposition de la Nouvelle Doctrine Medicale, &c." reviewed in our 8th number, who is one of the secretaries of the Athenæum. Dr A. formed his observations principally on two cases; of one of which he gives us the symptoms, and of the other the appearances on dissection.

The first patient was 27 years of age, and of a lymphatic temperament. She was favourably delivered, Sept. 1, 1822, and suckled her infant for three days, when it died. Two days after its demise the mother was attacked with puerperal peritonitis accompanied by delirium. On the 15th, after an antiphlogistic treatment, she was free from fever and appeared decidedly improving, when she was seized with a long chill followed by stupor, coma and delirium, and the febrile paroxysm lasted 16 hours. In a second paroxysm trismus supervened, and in a third the activity of the senses was entirely suspended. Twelve grains of the sulphate of quinine were given in one day, and under a continued use of this remedy the febrile irritation gradually wore off. On the 17th, however, new symptoms appeared. At the end of one of her attacks the patient complained of a violent pain in the left iliac region, and subsequently in the groin, the thigh, and the leg. All these parts soon became the seat of a swelling, which observed the same order of succession as the pain. The finger, moved along the inner side of the member, distinctly made known the sensation of a stretched cord, which was studded with violet coloured swellings very painful to the touch. Throughout the whole duration of this phlegmasia, the patient was a prey to mental depression and distress, which has been recorded by authors among the symptoms of phlegmasia dolens. Great benefit was derived at first from antiphlogistic treatment, and subsequently from compression combined with resolvent frictions and vapour baths. Thirty leeches (presumed of large size) were repeatedly applied, and calomel, it is said with much advantage.

This interesting case is followed by some highly curious reflections upon the nature and connection of the three diseases which so rapidly succeeded one another. The cerebral affection which exhibited itself under the intermittent type is attributed by the author to a repetition of the phlogosis of the peritoneum upon the tunica arachnoidea. He cites on this point a case already published by him, in which a gastro-enteritis was followed by a comatose intermittent fever.

M. ALLONEAU thinks that the disease called phlegmasia dolens consists in a phlogistic irritation of the lymphatic system, and of the cellular substance which lines the skin and separates the muscles. He passes in review several opinions emitted by authors; as those of Dr HALL, who considers it a rheumatism, which he promptly rejects. M. GOUPIL, however, does not agree with him where he entirely rejects the opinions of MM. RIBES and BOUILLAUD, which appear to be nearly the same with that of Dr DAVIS, viz. that the swelling is an œdema, produced by an obstruction to the free return of blood by the iliac veins. These appearances have, according to M. G., been too often found to admit of our rejecting them as causes of the disease; nor does he see any reason why these should be considered incapable of producing a subsequent phlegmasia of the cellular texture of the thigh. M. ALLONEAU thinks that these causes must be rejected in all cases which recover; as he presumes that wherever the iliac veins

are obstructed by clots of blood, pultaceous matter, &c. the consequence must be inevitable death. M. GOUPIL, on the other hand, conceives that phlebitis of these veins may easily exist to an inferior degree, without at all necessarily causing death, and refers for proof of the correctness of this opinion to the publications of MM. BRESCHET, BOUILLAUD, and others. He also thinks that great countenance is lent to the idea that phlegmasia dolens commences by inflammation of the *nerves* of the lumbar plexus, where they pass over the brim of the pelvis, by the fact, that one of the earliest symptoms is violent pain in the pelvis, accompanied by numbness of the thigh. He grants that there is, as M. DUGES remarks, a very great resemblance between the symptoms of phlegmasia dolens and those of neuritis or inflammation of nerves, as these are described by the accurate M. MARTINET.

Our readers will be struck with the resemblance between many of these remarks and those of our friend, Dr R. M. HUSTON, inserted in the number of this Journal for October last (Vol. IV. p. 237), and continued in the present number. The paper of M. ALLONEAU was published in November; so that no intercourse whatever could have taken place between them. This circumstance affords a striking instance of the correctness of the fact, that improvements and thoughts belong to the age, rather than to individuals; and that when information generally diffused has reached a certain point, the next advance will occur to more than one at the same time; and if the first be too indolent to record it, will devolve to a successor.

13. *Vaccination and Small Pox.*—Dr RUBLOCK, of Dresden, has published a pamphlet on these subjects; and his opinions command interest from the present state of the professional and public mind in relation to these diseases. He remarks that, although physicians unquestionably erred in supposing that vaccination possessed the power of entirely and absolutely preserving men from the small pox, this is in part to be explained by the fact that there prevailed no general epidemics of exanthematous diseases from 1802 to 1824, accident thus favouring the continuance of the deception. A tendency to these was felt in 1817, but they have particularly multiplied since 1820. Dr R. concedes that the vaccine can afford protection against variola, but only for a *limited time*. Nevertheless, this practice does not cease to be a most precious resource in the hands of the physician, because it either averts or modifies and mitigates the variola. Dr R. has seen a patient in his own practice twice affected with small pox; and in another instance, he has seen a girl affected with the latter disease, twelve years after being vaccinated (successfully we presume).

Dr R. has met with great success in treating small pox. The remedies with which he commences are emetics; and when a *putrid character* developes itself he places great dependence on the following prescription:—Impalpable powder of cinchona, one scruple; cream of tartar, fifteen grains; powder of canella, one grain:—M.—*Bulletin des Sci. Med. Oct.*

14. *Inoculation and Vaccination of Sheep.*—Vide Vol. 3, p. 179, of this Journal, Jan. 1827, for an account of vaccinations of various animals.—M. D. H. VANDER MEER, surgeon of Dragten, in Holland, has inoculated and vaccinated a number of sheep. His vaccinations all failed, although some of them were frequently repeated. An eruptive disease, recognized as the small pox, had appeared among the flock; the animals appeared dull, would neither eat nor cry, and hung their heads in a stupid manner. A numerous crop of pustules appeared, differing from each other in different parts of the body; the greater portion resembling those of the small pox in man, while others were as large as a piece of *ten sous* (say a ten cent piece) and oval or angular, and those situated around the mouth were generally small and dry.

With the matter of these pustules, Dr VANDER MEER succeeded in communicating the disease by inoculation. He found it become far less dangerous; not having lost one out of 200 on which he operated, and none having appear-

ed much indisposed, with the exception of a single individual, which lost an eye. —*Bulletin, Sept.*

Dr H.—C. MEDENBACH DE ROOY, of Hykerk in Holland, has made a number of experiments of the same kind. He found the inoculated small pox more fatal than did Dr VANDER MEER. Six sheep were affected by vaccination. On the fourth day, little tumours, more or less inflamed, were remarked; which dried, and in the course of the next two days formed crusts, one of which was the size of a sou piece. Both the distinct and confluent forms of small pox were distinctly characterized in the epidemic which gave rise to these inquiries.—*Ibid.*

15. *Modified Small Pox, produced artificially among Sheep, for purposes of Protection.*—A still more curious course of experiments is that conducted by M. PISSINA, of Moscow, in conjunction with M. LIBBALD, of the same place. Mr P. conceived that, by a long course of successive inoculations, he could reduce the virulence of the small pox matter, so as to generate, artificially, a substance capable of filling, among these animals, the same character as vaccine among men. Finding that the small pox was greatly weakened in its severity by being inoculated, he selected matter from a mild case, and inserted into fourteen or fifteen other individuals. Among these eventuated cases of very diversified severity, the majority, however, milder than the parent disease. From among them he selected the mildest case, and again inoculated fourteen or fifteen more; repeating this process five or six times. In this course of experiments, the eruption and fever grew gradually milder, until at last they entirely disappeared, with the single exception of "a mild eruption on the part inoculated." He now had a disease standing in the same point of view as the vaccine in the human species; and with this Messrs PISSINA and LIBBALD inoculated upwards of *one hundred thousand sheep*, in the great Russian estates, with gratifying success; the animals soon recovering, with the exception of those which lost their lives from some previous disease, or from accidental causes.

The disease thus propagated runs its course more slowly than the natural small pox; occupying from twelve to fourteen days in coming to its greatest degree of maturity, and ceasing in about a month.

We attach a peculiar importance and interest to this narrative; as it affords so very strong a confirmation of Dr JENNER's theory, that vaccine is a degenerated species of the small pox. Here, for the sheep race, we have a disease resembling vaccine, generated artificially under human inspection, and by an ingenious process much resembling that by which horticulturists have produced our finest fruits from stocks of a very different character. The narrative is published in the Moscow Journal of Agriculture, after receiving the approbation of the Society of Domestic Economy in that capital; and is analyzed in the Bulletin for October.

16. *Vaccination in Turkey.*—In the January number of the London Medical and Physical Journal, are given the details of an interesting occurrence, presented by M. BARON, author of the new and valuable Life of Dr JENNER; we mean the vaccination of three infants of the Grand Seigneur's family, by Dr AUBAN, a French physician now resident upwards of thirty years in Constantinople. Two other young females were vaccinated at the same time—all within the redoubted precincts of the Seraglio! The processes succeeded admirably; and the Doctor received a splendid present for achieving what, a very few years before, it might have cost him his head to suggest. This is considered one of the traits of genius of the new emperor; who has adopted so many improvements from his western neighbours.

17. *Mercurial Tremors.*—M. A. COLSON, of Noyon, physician and surgeon to two hospitals in that place, has published a memoir on the above subject in the *Archives*. He notices the omission to mention this affection in a long list of authors, terminating with Drs JOSEPH ADAMS and MATTHIAS; and ascribes it, in the greater number, to their disbelief of the injurious effects of mercury. In the

work of SAUVAGES, however, and in a paper by Dr WILSON in the Edinburgh Medical Essays, he finds the affection mentioned as being produced by mercurial frictions; and by Dr PEARSON, it is set down as a symptom of his "mercurial erethism;" (Anglicé, *irritation;* Vide Lexicon.) M. COLSON conceives the tremors to be a mere *epiphenomenon*, an accessary symptom. M. MERAT, in the Dict. des Sciences Médicales, states that tremors are produced by mercurial frictions; but M. CULLERIER, in another volume, conceives that it is only in the metallic or vaporized state that mercury has this effect.

M. COLSON attended a girl, affected, it is supposed, with the venereal disease, who was taking the antivenereal liquor of VAN SWIETEN; which had produced a febrile gastritis. In feeling her pulse, he observed a subsultus tendinum, unaccompanied, however, by any of those other symptoms which might lead him to expect such a phenomenon; and, on further investigation, he found that she was subject to muscular twitchings in both the superior and inferior extremities. It appeared that these symptoms had been coetaneous with her employment of VAN SWIETEN's liquor, which is a solution of deuto-chloride of mercury (corrosive sublimate). Since that period he has seen six other cases; which he has preserved in writing, and inserted in his memoir.

All his six patients were females. Dr C. can give no reason for this fact; and believes that men are also liable to it. He next considers the question whether there be any greater liability to the disease by exposure to mercurial fumes than by the medical use of the same metal. In two of his cases the tremors were owing to the use of VAN SWIETEN's liquor; and in the remaining four, to mercurial frictions. He conceives that the symptoms depend, exclusively of idiosyncrasies, upon the mere quantity of the poison absorbed; and that it is matter of entire indifference whether it be introduced in vapour through the organs employed in respiration, or in the forms of oxydes, salts, and chlorides, by the skin or digestive apparatus.

The author calls our attention to the fact that, in two of his patients, individuals who had never undergone syphilis, the pains possessed the characteristic trait of *exacerbations during the night*. He compares this with the remark of authors, that *syphilitic* pains are distinguished by these exacerbations; and leaves us to form our own inferences. It is incorrect to describe mercurial tremors as confined to the limbs; as they also affect the trunk. Of the *quantity* of mercury which will produce these affections, it is extremely difficult to judge: it will greatly depend upon the activity of absorption in the individual exposed, and, we will add, upon his nervous susceptibility. In one case, a few grains of deuto-chloride of mercury were sufficient; while, in others, more than twenty were required: in another, ten or twelve drachms of mercurial ointment would occasion them, and in a fourth, not less than three ounces and a half. Mercury should never be considered as an agent liable to produce but a single diseased derangement at a time; the presence of one morbid affection from this cause by no means excluding another. Dr C. has seen tremors combined with excessive salivation, gastritis, amenorrhœa, &c. The author compares them with those produced by tea, by the abuse of spirituous liquors, &c.; and remarks that mercury, in like manner with these substances, can either produce acute tremblings of short duration, or, by a continued application of the poison, may occasion their assuming the chronic form. The duration of the tremors, after quitting the use of mercury, varied in the cases observed by him, from fifteen days to eight months. In those instances where the mercury has not been used for a long period of time the principal indication of treatment is the *omission* of the poison—*sublatâ causâ tollitur effectus*—but where the disease is of longer duration, and particularly where the patient is highly charged with mercury, remedial means must be resorted to. Of these, the most successful were the warm bath, a milk diet, and sudorific ptisans (probably containing sarsaparilla), castoreum, assafœtida, and opium. M. C. concludes by suggesting the use of purgatives; which, as he says, will make a derivation; but, as he has not shewn that the disease consists in an inflammation of any organ, we are not aware from what quarter derivation is to be desired.

18. *On Method in the Study of Medicine.*—Notwithstanding our most earnest attachment to matters of fact, which we consider the only foundation and principal component material of real science, the observations of M. BUCHEZ upon the necessity of method, and a just theory, are so apposite and so valuable, that we cannot resist the temptation of noticing them. This physician is author of several eloquent essays which have appeared in the new Journal des Progrès, &c. a work which adds to an unrivalled collection of valuable matter the additional recommendation of being, like our own, the property of the profession. Nothing, says Dr BUCHEZ, is more common than to hear declarations of an exclusive attachment to fact and to experience, and this perhaps offered as a reason for neglecting those writings which are so frequently stigmatized under the appellation of *theoretical.* Now, has any of those systems, which have gone to the ground amid the changes of past ages, ever pretended to stand independent of facts? Have they not all professed to be founded on the most philosophical view of facts which was then to be obtained? And yet they have perished! One was erected on the doctrine of atoms; another on that of the four elements; a third on mechanical philosophy; a fourth on salts, sulphur, &c. &c. And were not all these the result of the observations of the day, misunderstood no doubt, but explained in the best manner of which philosophers were then capable?

When a man undertakes to explore any thing, it is a principle in human nature that he must, of necessity, hold some end in view—entertain some doctrine to be established or refuted; and wherever courses of experiments are entertained for the purpose of achieving exact truth, we may always discern the operation of a ruling opinion of the age. Even with those who are but little versed in the literature of science, and who are acquainted with the observations of their predecessors only by accident, or by hearsay, we can still discern the operation of theory, and frequently of the most crude hypothesis, in every thing they do. It is, in fact, precisely those who decry theory that are most completely under its influence; they disavow the established opinions of the times, but form themselves, in private, individual doctrines of their own. And these again are generally founded upon an imperfect knowledge of the subject, derived either from casual reading, or, as in very many instances, formed from the crumbled ruins of what had been the popular theoretical dogmas of the last age. A ruling idea, as M. BUCHEZ styles it, appears to govern in every æra of science, and imprints its character upon every the most independent mind. There is in the atmosphere of science a sort of equipoise, somewhat similar to that which prevails in its physical prototype; the freedom of communication between remote physicians preparing a great number of minds at once for the same discovery, and suggesting the same hint to them all. Dr B. instances, as examples of this kind, the simultaneous inquiries and triumphs of M. ROLANDO in Italy, and M. FLOURENS in France, with respect to the spinal marrow, cerebellum, &c.; those of MM. MAGENDIE, BELL and BELLINGERI on the nerves; and those of Dr PHYSICK and M. DUPUYTREN on the cure of artificial anus.

We should then be careful before we pronounce useless the theories, however whimsical, of ancient times. They served to generalize facts, and enable the human intellect to retain them; they were part of the machinery necessary for the prosecution of science, and in reality contributed essentially to those very advancements which soon effected their own downfal.

Upon the same principle too, M. BUCHEZ denounces, as useless, all detached facts which have not been observed with a reference to some preconceived and perhaps general principle. The objection is continually made to numerous records of medical cases, that they are "imperfect." All human observations are imperfect; and the real fault is that those in question are not adapted to any theory which they may serve to confirm or correct. The use of theories is to classify facts, and to preserve them in the memory; furnishing at the same time an approximative estimate of the truth in any intermediate case, not provided for by an exact observation; requiring for its use all that precaution which should be suggested by a consideration of the important charge of health and life which is

laid upon the physician; but frequently furnishing the only light which we possess for our guidance.

In the remainder of Dr BUCHEZ's very interesting paper, he takes a wider range, and embraces materials which we apprehend would be less to our present purpose. He analyzes the principal leading medical systems at considerable length. Neither analysis nor synthesis are, according to him, entitled to the epithet *method* of medical study; they are only partial modes of operating in the various methods, and should both be employed alternately, according to the nature of the materials already known and the point into which it is desirable next to inquire. No scientific research appears to him to be complete unless both analysis and synthesis be twice exerted upon it; the first time to make the discovery and joint it into its proper place in human science, the second time to correct what has been done. There appear to him to be only two general methods of inquiry: the conjectural and the positive. The latter is the one best adapted to our use at the present time, and can only be founded upon a most enlarged course of study, similar in its character to that which placed BACON at the head of modern science. Whether it be necessary or likely soon to become so, to quit the present mode of accumulating facts for another one, he intends to examine in a future essay. He observes in the course of his discussion, that to propose for one science the mode of study found successful in another, is not true philosophy. The proper course of investigating each science is only to be extracted from the materials presented by itself.

19. *Gastro-enteritis.*—The restricted bounds of this subdivision of the Quarterly Summary have never appeared to us competent to review the current pathological researches in an adequate manner. To convey a sufficient idea of the various investigations which are going on with regard to the mucous membranes of the digestive tube alone, would easily fill our space; and for this reason we have trusted to reviews for the progressive development of much that we should otherwise be gratified to see here. No work upon this subject, however, having been laid out for review, the necessity of noticing it more at length in this summary becomes more imperative.

Dr BROUSSAIS continues to publish, monthly, a series of invaluable cases, observed, we understand, by himself. We extract from the last number of his admirable Journal, a case of *general gout, gastro-duodenitis, arachnitis, and pleurisy, with effusion.* An officer of marines, aged 45 years, had been affected with coxalgia, terminating by spontaneous luxation. He was seized with acute rheumatism, accompanied by perpetual tremblings or twitches of all the muscular fibres which could be examined. Acute pain in the muscles, red tongue, pain in the right hypochondrium, and a swelling of the liver, were also present. Bleeding, and leeches to all the pained parts, emollients, narcotics, and regimen, removed the rheumatic pains in three days. A slow fever continued, with some symptoms of gastro-duodenitis, and intermittence of the pulse. Severe diet, and demulcents were directed. The tumour of the hypochondrium had now almost disappeared; there was no cough, dyspnœa, or delirium. The patient shewed a tendency to stare or gaze; disliked conversation, stopped at the first few ideas suggested, and replied in few words; he exhibited disinclination for liquids, amounting to a positive disgust, every other day. Next, the patient complained of feeling his heart beat in the right side, twenty-one days after the commencement of the disease; when to the great surprise of the medical attendant, the whole left side of the chest was found to be incapable of giving any sound when struck. A totally unsuspected pleurisy had completely filled the right pleura with fluid. In six weeks, the patient exhibited a quiet delirium, and sunk, without any violent struggle, the next day.

Dissection showed a duodenitis, with ulceration, near the pylorus, and an enlargement, and a yellow, and what the French call, a fatty condition of the liver (*foie gras*). No one, however, anticipated the amount of disease to be discovered in the cavity of the head. The arachnoid was of the extraordinary thickness

of a line; and had become opake, gelatinous, somewhat tough, and incrusted with white granulations. The judgment so unexpectedly formed of the thorax was found correct; a great deposition of pus having completely flattened (*atrophié*) the lungs, and exhibiting abundant evidence of a pleurisy.

20. *Ecchymoses of the Skin, with œdema and gastro-enteritis*, apparently kept up by the latter; by Dr Ollivier, of Angers, in the October number of the Archives. A stout female child, three years of age, which had generally enjoyed good health, dined with a good appetite, and then for the first time complained that she could not stand, and that her legs were painful. From this time, during upwards of a month, she was subjected to a diversified series of symptoms, which were met with the persevering attentions of her physician, and with alternate success. We will not follow the detail. Large violet-coloured patches appeared in various parts of the body, and were re-excited by the slightest cause; such as the pressure of a garter, the act of scratching, &c. Beneath and around them were produced large patches of œdema. In three days, pain in the belly came on, and it frequently recurred during nearly the whole remaining period of her illness; frequency of pulse (120 . . 130), heat of skin, restlessness, exacerbations at night, &c. had existed from the commencement, and characterized the whole disease. In eleven days, urticaria appeared, which disappeared in the following day, leaving violet-coloured ecchymoses in the situation of the patches. In thirty-two days, the pains in the abdomen began to subside; and in about forty days, had entirely ceased. The œdema and ecchymoses continued to appear occasionally for some time longer. The appetite had returned, the nights were better, and every thing indicated established convalescence, when a severe relapse took place, without any discoverable cause. Under diet, emollient enemata, and diluting drinks, this was, however, recovered from; and, after another more transient relapse, the child eventually was restored to health in about six weeks from the commencement of the indisposition.

The *treatment* found so beneficial consisted principally in gentle purging by castor oil, emollient and occasionally anodyne enemata, some of them having the addition of half an ounce of mercurial honey,—oily embrocations to the abdomen, cataplasms in the same situation, seat-baths (bains de siége), with other warm bathing, gum water acidulated with lemon juice, gooseberry water and other demulcents, leeches to the anus, and a very strict adherence to an unstimulating diet.

We have inserted the above as an example of the association of gastro-enteric irritation with this very singular affection, the *purpura hæmorrhagica* of Dr Willan. It may serve to exhibit one of the varieties of connection, causative, consequent, or accidental, between inflammation of the mucous membranes of the stomach and intestines, and irritation in various other parts of the body. At the same time it furnishes an interesting point of comparison with the curious case presented by Dr R. M. Huston, in our second volume, p. 24.

In the November number of the Journal Général, occur two highly interesting cases, by Messrs François and Sandras, from the practice of M. François, which we omit, as they are more appropriate under another head than the present.

21. *Mania* often arises *from chronic gastro-enteritis*, as is remarked by many modern writers. M. A. L. J. Bayle has inserted, in the Revue Medicale of last year, two memoirs, to which he promises the addition of a third, on the mutual influence of mental diseases with those of the gastro-intestinal tube. The first and second memoirs contain a series of cases, adapted to demonstrate the origin of mental derangement from the above-recited causes, and to exhibit certain peculiarities in the symptoms, including the delirium. The object of the third is announced to be to exemplify the influence of mental diseases in the development of chronic gastro-enteritis.

When we consider the severity, distressing character, and frequent obstinacy of continuance, which belong to mental maladies, and add to these the frequency, and ruinous consequences to human comfort, of hypochondria and dyspepsia,

with the unquestioned and hourly mutual influence which the mind and the digestive organs exert on each other, we will readily agree that there hardly exists a more interesting branch of medical inquiry. If space permitted, we should be highly gratified by the pleasure of analyzing Dr BAYLE's whole list of cases. As it is, we shall copy the titles of the three inserted in the second essay.

These are—*Case* 1. Abdominal pains, attacks of mania, subsequently melancholy, with paroxysms of agitation, pains in the epigastrium, refusal of food: soon after, *fear of poison*, diarrhœa, rapid emaciation. *Dissection*.—Some traces of arachnitis; gastric mucous membrane of a reddish-brown colour, that of the intestines red and ulcerated.

Case 2. Habitual distress and pains in the epigastrium; white tongue, fever and sweats; the taking of five drastic pills, called *Clérambourg's*, followed by alarming symptoms, and soon after by a violent delirium, with fear of poison and refusal of food. After several attacks of mania followed by copious perspirations, on the comparatively calm days; continuance of the fever, redness of the tongue, and diarrhœa: soon after, recovery.

Case 3. Hereditary predisposition; masturbation; epigastric pains, which soon became more severe; fever; the use of fifteen grains of ipecacuanha and two of tartar emetic, followed by an augmentation of the gastric symptoms, and soon after by a settled mania: and other cases.

The practical precepts, beautifully deduced from these by Dr BAYLE, possess the greatest value; and we shall endeavour to present a sketch of them in our next number.

IV. PRACTICE OF MEDICINE, THERAPEUTICS, AND MATERIA MEDICA.

22. *Belladonna as a Preventive of Scarlet Fever*.—The German physicians express increasing confidence in the prophylactic virtues of this medicine in scarlet fever. The following directions are given for its administration—three grains of the extract of belladonna are to be dissolved in an ounce of water, with a small quantity of spirit of wine. As many drops of the solution are to be given, twice a day, as the patient has years of age. To protect the constitution against the contagion effectually, the remedy must be continued for at least eight days. From idiosyncrasy, the belladonna occasionally fails in rendering the patient secure against scarlatina. It has appeared also, that some epidemics are less under its control than others. Additional testimony on this subject is furnished by the results of Dr VELSEN's practice. During an epidemic of scarlet fever in the town of Cleves, the belladonna was administered in six weeks to 247 patients. Out of this number only thirteen contracted the disease. Four children had taken the remedy irregularly; one child had taken it regularly for fourteen days; another had taken it eight days; and seven employed it only forty-eight hours. Of these, one of a debilitated constitution died. All the others had the disease very slightly in comparison with those patients who had not taken the belladonna. The following striking proof is worthy of notice. A man, the father of four children, was attacked with the prevailing epidemic after having visited a friend who was confined to his bed with the same disease. His wife and children, the youngest three weeks, the oldest four years of age, took the extract of belladonna regularly in the form and doses above mentioned. Although they continued to live with the patient night and day in a small and ill ventilated apartment, they all escaped the disease.—*London Med. and Phys. Journ. Jan.* 1828.

23. *Cure of Nasal Polypi*.—Dr PRIMUS, of Babenhausen, asserts that the saffronized tincture of opium (of the Prussian pharmacopœia) possesses the property of gradually destroying nasal polypi when applied to them. Some cures which have been thus effected have already been published, and a striking case occurred in January 1826. A man, forty-six years of age, had one in

each nostril. The tincture was applied several times a day to the bases of the polypi by means of a small hair brush or lint roll. In eight days the tumours had assumed a paler appearance, and lost a little in volume; a serous secretion from the nose, which had existed for a long time, was diminished and the pituitary membrane had acquired a more lively tint, as if in a sub-inflammatory state. Under the use of the application the tumours continued to decrease, and at the end of three weeks they had entirely disappeared.—*Med. Chirurg. Zeitung.*

24. *Glossitis.*—Two cases of this disease are given in the form of hospital reports in the January number of the *London Medical and Physical Journal.* The first was of a man aged fifty-five years—the complaint two days in duration—bowels costive—pulse seventy-eight. Two applications of leeches, sixteen each time, to the angle of the jaw on successive days—purgative enemata—laxative draught and blisters behind the ears were the successful remedies. Patient dismissed cured after being nine days in the house.

The second case was of a female aged thirty-two, married but childless—pulse 100, full and hard; bowels costive; face somewhat flushed.—Relief was obtained by two bleedings each of ℥xvii.; cathartic enemata; leeches twice to the angle of the jaw; blisters along both sides of the lower angle of the jaw, to be dressed with savine ointment; cathartic after the patient could swallow, which produced several copious dark stools. After relief from the glossitis, "she remained for a fortnight with inflammation of the right tonsil, which in spite of the active measures employed went on to suppuration; the digestive organs becoming seriously deranged, with bilious vomiting. These, with many other interesting cases of various disease, are drawn up by Mr ALEXANDER RAINY, senior pupil in the Aberdeen New Dispensary.

25. *The Manna Gum Tree. Manna Eucalyptus.*—The trees blossom from November till May. In those and the intermediate months, the manna falls, the weather being hot and dry. The quantity of manna depends upon the number of flowers which the trees and seasons produce, as the manna proceeds from the flowering cups which are full of honey. These cups become the seed vessels; they grow very thick on the tops of the branches, and form, with the cups, the distinguishing character of the genus, as named by the French botanists. The flowers are much thicker on this than they are on others of this genus that I have observed which abound in New Holland.

The flowering cups, or seed vessels, being filled with this sweet juice, as the wind gently moves the branches, it falls on the leaves—these become inspissated and dry by the heat of the sun, and fall to the ground in white lumps of various shapes and sizes. It sometimes falls so abundantly as nearly to cover the ground under some of the trees. The ants devour it very fast, and they are always very numerous under the trees—probably it is to them a delicious food.

The manna gum tree is, when in full growth and in rich alluvial soil, a very beautiful tree, affording in the hot season a very agreeable shade. It is of a large size, and I have seen it, when full grown, five feet in diameter at the butt, and of considerable height. It sheds its outer bark, which peels off throughout the year. The bark is of a bluish white, the foliage of a very dark green, very thick and pendent on the tops of the branches. The wood of this species of eucalyptus is remarkable for its resistance to fire, probably from the saccharine nature of its sap, and in a state of decay it becomes arid.—*Australian*, copied into the *London Med. Reposit. Dec.* 1827.

26. *Gastro-enterites caused by the emetico-cathartic of Leroy.*—Of seven hundred cases of gastro-enteritic disease caused by the secret distribution of this medicine to the soldiers of the royal guard at Versailles, twenty-seven died. Autopsic examination of these latter shewed inflammation of the mucous membrane of the stomach, duodenum and ileon, but especially in the vicinity of the pylorus. This membrane was often found ulcerated in several parts. In many subjects the arachnoid was thickened, and infiltrations from it were found in the ventricles, the basis of the brain and the spinal canal. These accidents happened

in 1822, and are recorded by Dr Le Noble, physician to the hospital at Versailles. Dr Boisseau, who made a report on this memoir to the Academy of Medicine, points out the difference between gastro-enterites brought on artificially or by irritating or acrid ingesta, and those occurring epidemically, in the much greater curability of the former.—*Archiv. Gen. Nov.* 1827.

27. *Castor Oil a Cure for the Ring Worm.*—We read in the *London Medical Repository and Review* for December 1827, that a gentleman had been subject to the ring worm, which had long resisted all the appliances external and internal of the regular faculty, and he was so far from being relieved, that the complaint became worse and worse—insomuch that he was induced to make trial of a remedy suggested by a Parsee boy in his service. This consisted in the external application of castor oil, from which immediate relief, and in no long time, a perfect cure, was experienced. An officer of high rank, who had suffered still longer, and more grievously, under the same complaint, was persuaded to try the same remedy, and found in it a speedy and perfect cure. He had been in unceasing misery for three years. He found sensible relief in a few hours, and was cured in three days. Several more obscure persons were cured in like manner. It is not mentioned how often, nor for what length of time, this application was made; but a little discretion and good sense will supply this omission.

Our readers will remember the method of curing the itch adopted by professor Delpech of Montpellier, and reported in this Journal for October 1827. Olive oil was there stated to have exercised all the controlling effects on psora which castor oil is said to have done in herpes.

28. *Sand Baths.*—The use of this kind of baths is, we are told by Desgenettes, of Arabian origin. Solano di Lucca introduced them into Spain, and Fouquet among the French has lauded them in scurvy and phthisis pulmonalis. In Spain the patients are left in the bath from three quarters of an hour to an hour and a half, and in case of fainting, a strong wine or decoction of acorns (bellota) is administered to them.

The attention of the French Academy of Medicine has been lately directed to this subject by Dr Marc, who read a report based on an extract from the *Gazette Allemande* of St Petersburgh. We learn from this document that there is a deposition of marine salt in the Crimea which is employed as baths in the cure of hysteria, hypochondriasis, scrofula, scurvy, hemorrhoids, &c. On the borders of the Black Sea, in the Crimea, 45 wersts from Simpheropol and 17 from Kosloff, the recession of the sea, during the great heats of summer, leaves exposed a saline mud, oily to the touch, grey on the surface, and black internally, and giving the odour of marine plants. It is in this mud, which has been ascertained to contain a quantity of marine salt, that the inhabitants of the Crimea, and especially the Tartars, bathe by burying themselves in it. A ditch is scooped out in the form of a bathing tub, in which the patient is put quite naked, and covered with the saline mud, which is renewed several times in the space of three or four hours. He takes at the same time a *tonic* and *demulcent* drink: and on coming out of this bath he plunges into one of common water. The effects of this practice are a mild and general glow of heat soon followed by profuse sweat and eruption all over the skin, and after the lapse of a few hours a most voracious appetite.—*Archiv. Gen. de Med. Nov.* 1827.

29. *Singular Effect of a Cantharides Plaster.*—The second application of a blistering plaster to the chest for a pleuritic stitch was followed, in a case attended by Dr Ammon, with an ulcer on the glans penis, which was not healed until after the expiration of three weeks. It was washed daily with a solution of the acetate of lead. It is worthy of remark that the patient on this occasion protested against the vesicating application, alleging that a similar remedy having been made use of for a pleurisy under which he laboured several years before, was followed by a violent gonorrhœa, which did not yield until five weeks of

suitable treatment.—*List. annals des ges heik.*, copied into the *Bibliotheque Med icale.*

30. *Hæmatemesis caused by per-carbonated Hydrogen.*—Dr De Fermon relates the case of a young woman twenty-two years of age, who, though she menstruated regularly and had usually enjoyed good health, was seized with a vomiting of black blood in large quantities. The situation of the wine store in which this young woman spends her days, and of her bed room, the first having three cocks of lighting gas, and the second being exposed to two others, and having a third in it, accounts, in the opinion of Dr De Fermon, for the production of the disease. He refers to the experiments of MM. Gaspard and Magendie on the introduction of putrid matters into the veins, and to those of Nysten on the introduction of gases into the animal economy; and also the production of intermittent and yellow fevers by marsh air: and he draws the inference that, whenever a foreign substance or matter is thrown into the circulatory apparatus, and which cannot be assimilated to our tissues or fluids, there is, whether the absorption has been from the lungs or elsewhere, a sanguineous exhalation from the intestinal surface.—*Bulletin des Sciences Med.*

31. *Chloride of Lime for the cure of Itch.*—M. Derheims, of St Omer, recommends, in the *Journ. de Chim. Med. de Pharm. et de Toxicol.* for Dec. 1827, the following solution for the cure of itch:—Dry chloride of lime, three ounces, distilled water, one pound. The solution is to be applied as a lotion to the thighs, legs and arms two or three times a day. Six or ten days suffice for a cure. The liquid chlorides of soda and potass have been employed with a nearly equal success.

32. *Hydro-sulphurous water in Colica Pictonum.*—MM. Chevallier and Rayer reported to the Academy of Medicine of Paris at its sitting last September, that the hydro-sulphurous waters of the springs at Enghien and Barrèges taken internally are efficacious in calming the saturnine colic, in those persons employed in the manufacture of white lead.

33. *Sulphate of Quinine in Intermittent Fevers.*—As recorders, in this department of our work, of what we find related in other Journals, without our pretending to be responsible for, or to advocate and approve of the soundness of the reasoning, or the alleged successful practice in medicine, or operation in surgery, narrated in them, we must here notice the clinical remarks of M. Bally at the Hospital de la Pitie. This gentleman contends that small doses of the sulphate of quinine, two grains for example, have very uncertain therapeutical effects, at the same time that they are apt to produce syncope, vomiting and other nervous symptoms referable to *cerebral exaltation.* He asserts that if this medicine be administered in large doses, such as twenty to thirty grains in the day, it will, so far from producing the accidents attributed to it by practitioners, cause the redness and saburral state of the tongue to disappear, and act as a sedative on the nervous and circulatory systems. Nay, still farther, M. Bally is induced to believe that in the engorgements of the spleen, the sulphate of quinine acts as a *deobstruent*, by promptly removing all symptoms of enlargement.

34. *Fumigations of Chlorine in Phthisis Pulmonalis.*—On the recommendation of a M. Gamal, ex-assistant in chemistry to M. Thenard, a series of clinical trials have been made of the effects of chlorine in pulmonary consumption, in the *Hôpital de la Charité.* We wave any minute description of the apparatus, and shall content ourselves with stating that the result was, as might have been anticipated, eminently unsuccessful. In three out of six cases, with cavernous abscesses, there was an aggravation of the disease consequent on the use of the chlorine. Two other patients left the hospital without any marked effects being felt. The sixth, a strong subject, alleged that he experienced nothing peculiar from the medication, and he certainly evinced no sensible change.

35. *Epidemic Zona.*—The hospital of the Bicetre presented in November last an example of epidemic zona. More than thirty persons were assailed by the disease. In one of these, the inflammation was so violent as to end in gangrene of the affected part. Many instances of zona have been observed at the same time in Paris.—*Nouv. Biblioth. Med.*

36. *Constipation of the Bowels.*—In the December number of the London Medical and Physical we find the relations of two cases of obstinate constipation successfully treated. The first was of twenty one days duration. Mr JONES, the professional attendant, had tried in vain calomel and jalap in pills, enemata of different kinds, laxative, terebinthinate and tobacco, croton oil, calomel and opium, extract colocynth, aloes, &c. As a last effort he prescribed the following liniment, to be well rubbed upon the abdomen, particularly over the region of the stomach and arch of the colon, every two or three hours, and each rubbing to be continued for at least twenty minutes: Camphoræ, 1 dr. Ol. oliv. opt. 1½ oz. Liq. ammon. ½ oz.—M.

In the evening of the following day, after this prescription was given, word was brought by the nurse to Mr JONES, that about half an hour after the friction with the liniment had been well used, the patient had a most copious liquid evacuation, which was soon followed by others equally copious, having the consistence and appearance of yeast. She was speedily relieved from all complaints.

The second case of obstruction of the bowels was of twelve days standing. It occurred in the practice of Dr ALEXANDER of Genoa. The patient had all the symptoms of strangulated intestine, although the hernia under which he had suffered for seventeen years was not at all painful, and was reduced by the taxis to one half its usual size. All the usual remedies in such cases were tried in this without effect—and the patient was on the evening of the twelfth day considered as one destined soon to breathe his last. At this epoch Dr ALEXANDER endeavoured to approach the evil more nearly by means which we shall give in his own words.

"I attached," says he, "a long, hollow urethra bougie to the pipe of an injection syringe, calculated to contain more than a pint: this I filled with warm water, and having introduced the entire length of the tube by the anus, I threw the contents of the syringe into the bowel with some force. I then attempted to draw back the piston of the syringe, held steadily in the same position, and with some exertion raised it out one third of its length for the purpose of withdrawing any fluid within its reach. I had continued this action for about half a minute, when my patient exclaimed that he could not breathe longer, and that something was descending. At this moment I felt a sudden rush of fluid into the body of the syringe which was very soon filled; and upon withdrawing the tube, he had immediately a large feculent fluid evacuation, attended with instant and complete relief of all his symptoms. He very soon fell asleep, after taking some jelly and wine, which rested comfortably on the stomach; he awakened refreshed, easy and with an appearance of relief and composure quite new to him for several days. In twelve hours after, he had (as I anticipated) a most violent purging, which seemed to threaten his life; but by stimulants and nourishment, he rallied again, and in due time after, his digestive organs resumed their function, his strength recruited, and I am happy to say he is now restored to perfect health."

Dr ALEXANDER recommends in similar cases an early recourse to the tube and syringe, the former of which might be two feet and of a softer material than the bougie generally is, "so as to follow the windings of the intestines."

37. *Remittent Fever in England in* 1827.—The following statement will shew that our country is not the only one which of late years has suffered in an unusual degree from remittent and intermittent fevers. The sickness in the vicinity of London during the autumn of 1827 will remind us of the epidemic visitation in the country around Philadelphia and the precincts of the city itself in 1823.

"It is notorious," says the Journal of Science, "that in the last autumn the re-

mittent fevers in various parts of the country amounted to a species of pestilence, such as has scarcely been known in England from this cause, or, we might almost indeed say, from any other disease, since the days of Sydenham. Wherever ague had existed, or even been supposed possible, in those places was this fever found: so that in all the well known tracts in Lincolnshire, Norfolk, Suffolk, Kent, Essex, Sussex, Hampshire and so forth, there was scarcely a house without one or more inhabitants under fever, while the event, as might be expected, was a considerable mortality. In the parish of Marston in Lincolnshire, for example, it amounted to twenty-five in three hundred inhabitants; in some other places, it reached one in sixteen, one in thirteen, and one in nine. And so extensive was its range, that even Hastings did not escape, while it would be almost superfluous to say that every other town on the sea coast was so much infected by it, that they who resorted to them for bathing, as usual, found themselves most awkwardly situated and also suffered in considerable numbers."

Fevers of the same nature have been very prevalent in various parts of the outskirts of London, and in the towns or villages connected with it, within a range of from six to ten miles. The writer goes on to say, "that whatever was the pestilence last year, it promises to be much greater in the present one. This is easily judged from the manner in which the season has set in; but still more decidedly from the extraordinary prevalence of ague in the spring; since that which is intermittent fever then, will be remittent in the autumn; or rather, as the author has justly remarked, there will scarcely be a definite season of vernal intermittent; but the remittent will commence immediately, increasing in extent and severity as the summer advances, and promising to become, in the autumn, the greatest season of disease that England has known for this century.

As an example of this, it must suffice to enumerate two or three facts, while these are as satisfactory for our purpose as a thousand would be. The most general of these is, that ague is at this moment extremely abundant where it was formerly so little known as not to be noticed, and that where single cases used to occur, there are now hundreds. Thus has it prevailed at Fulham and Ealing, and in the outskirts of London, and even in the town itself; and thus does it so prevail in Greenwich, Deptford and the associated vicinity, that a medical friend informs us that it comprises more than two-thirds of his entire practice, which is very extensive; whereas a few years ago, he had rarely a patient in a year. Thus also, in the Military Hospital at Woolwich, there were in the spring three hundred patients with this disease; while, in former times, we are assured that an ague was scarcely known once in five or six years."

38. *Sulphate of Quinine externally applied.*—The French Journals contain many accounts of the good effects of the application of the sulphate of quinine in powder to the skin, after the removal of the dermoid tissue by a blister. This method of using the medicine is good in all those cases in which its internal administration was indicated, but in which the extreme feebleness or irritability of the stomach is such as to cause it to be rejected when swallowed. This cutaneous medication has been practised with advantage in the Philadelphia Alms House.

39. *Epilepsy of thirty years duration cured by a Burn.*—A case of this nature is related, in Hufeland's Journal for August 1826, by a Dr Bona. The patient, a shoe-maker, 41 years of age, became epileptic when eleven years old. The fits, at first few in number, finally became regular and frequent, recurring every fortnight at the time of the new and full moon. During a paroxysm of the disease, one day left to himself, he fell into a turf fire and burned severely his left thigh. A large and deep ulcer was the consequence of the burn, but which under the care of Dr Bona finally cicatrized. From the day when the accident occurred, the 20th of March, to the time when Dr B. wrote, in August, this man had escaped any return of epileptic fits.

40. *Iodides of Sulphur in Cutaneous Diseases.*—Dr Biets, of the Hospital of

St Louis, has instituted trials of the efficacy of the iodides of sulphur as an external application in the squamous, pustular and papular affections of the skin. He has already witnessed their good effects in psoriasis, or dry or scaly tetter, in tinea favosa, and gutta, or acne, rosacea, and is inclined to consider them as among our most powerful therapeutical agents in obstinate cutaneous complaints. But much caution is demanded in employing them. They are mixed with some fatty matter in the proportion of a twenty-fifth, a twentieth or a sixteenth part, and rubbed on the affected part. The deuto-iodide applied to a healthy skin stimulates it strongly and causes itching and even pain and inflammation.—*Clinique des Hôpitaux*, copied into the *Journal des Progres, &c. No. VI.*

41. *Polysarchia removed by free Depletion and the use of Iodine.*—An interesting account of excessive corpulency and the treatment adopted for its relief, has been published in a pamphlet form some time back, by the celebrated surgeon GRAEFE, of Berlin. From a notice of it in a German journal we glean the following:—A butcher of Berlin, named Kröcher, was the subject of the case. Until the age of 30 years he was rather slender, and passionately fond of dancing. After travelling, as is so much the German fashion with tradesmen and mechanics, in Russia, he felt a gradual increase of appetite for flesh meat, which after a time degenerated into a true bulimia. His voracity may be judged of from a wager which he made and won, that he would eat in the course of twenty-four hours a whole calf, with no other seasoning or addition than salt. In his thirty-seventh year, his adipose development was so great, that he could neither stand nor sit, but was obliged to preserve a recumbent posture; and he was at this time, when Dr GRAEFE first visited him, in danger of being suffocated by his own fat.

Dr G. began the treatment by frequent venesection, sometimes twice in twenty-four hours, whenever the oppression was most urgent. The quantity of blood we do not find stated. Goulard's water and extract of belladonna were applied to the enormously distended abdomen. Purgatives were administered daily, which produced twenty, thirty, and even sometimes sixty stools, in the course of the twenty-four hours. Recourse was finally had to the iodine as an emaciating agent. The diet was vegetable and of a very restricted quantity. Under this treatment the patient, who weighed four hundred and fifty pounds at the height of his malady, was reduced, during the period which elapsed from December 1825 to April 1826, to one half of this weight. After this he was able to move about freely, and attend to his business as in early life. His fondness for animal food and his voracious appetite had disappeared. But for the fears entertained of the secondary bad effects of the iodine, its continued use would in the opinion of Dr GRAEFE have reduced Kröcher to his original size. We regret not being able to state the doses of the iodine, nor the entire amount made use of. The general rule however applies, whatever may be the disease, viz. to begin with a moderate dose, and gradually increase it.

42. *Hemlock as a Remedy for the Itch.*—Dr GIOVANNI PELLEGRINI, says the *Journal Universel*, has made use with the greatest success of the hemlock *(conium maculatum)* in the treatment of the itch. He directs the leaves of the plant to be bruised in a marble mortar so as to express the juice, with which the eruption is to be rubbed five or six times. The disease speedily disappears. He sometimes makes use of the pulverized leaves, at other times of the extract and the decoction—in all cases with entire success.

Perhaps the author would have done well to point out the necessity of a cautious use of so powerful a medicine as the hemlock, which, when thus applied to an irritable and absorbent surface, cannot fail on occasions to produce marked, if not violent and dangerous, constitutional disease.

43. *Hydrorachis cured by Puncturing.*—The Journal Universel for Nov. 1827, under its head of *Variétés*, gives an account of two cases of dropsy of the spinal cord cured by puncturing the tumour. The first was of a child two mouths old,

with a transparent tumour of the lumbar region. It was accidentally punctured at first, and subsequently two other times by the physician in attendance. Compression was exercised, and the subjacent parts were united and became so firm in the course of a twelvemonth, that this portion of the vertebral column had acquired a semi-cartilaginous consistence, and the lower limbs regained all their power. The want of continuity of the bony canal was supplied by a plate of lead kept on by a compress and roller. The punctures are recommended to be made very small, and when hydrocephalus co-exists, we are cautioned not to expect such complete success as in the case just narrated, and in another equally fortunate in its results.

We could have wished for the name of the physician, and the time and place when the operation was performed. Narratives of all kinds lose much of their value if divested of the circumstances of location, chronology and precise mention of the principal actors.

V. MEDICAL JURISPRUDENCE.

44. *Medico-Legal Discussion on Insanity*, by Dr GEORGET. We believe that we shall render an acceptable service to our readers by laying before them some interesting facts, and plain reasonings on the subject which heads this article. Dr GEORGET's work on Insanity is among the very best extant. It is for the purpose of giving still farther extension to the views contained in it that he has written the valuable articles in the *Archives Generales de Medicine*, from which we shall chiefly draw for what follows. With Dr G. we may very well say that questions in legal medicine connected with insanity are neither the least numerous, nor the least difficult. Judges are frequently called on to grant guardians or trustees, in consequence of the alleged mental incapacity of certain individuals to manage their own concerns—and juries to give verdict in cases of improper or mischievous acts, according to their belief of the sanity or insanity of the persons accused. They are on these occasions often at a loss for data on which to form these opinions,—and they naturally look to physicians for assistance.

The great obstacle to a clear understanding of the extent of the moral responsibility of those accused of crimes is the ignorance, for the most part, of the members of society generally of the existence and nature of partial insanity or monomania. They cannot conceive how a man should be proclaimed of unsound mind who reasons well on most things, displays natural and laudable feelings and is only wild or extravagant on a particular subject of thought or affection. In some the change in their intellectual state is so gradual as often not to excite especial comment or remark, until the commission of some revolting extravagance or flagrant crime. The preceding whims and vagaries—inconsistences of conduct and incoherences of remark are two often overlooked or are put down vaguely to the score of eccentricity—an explanation about as valid as to account for a train of morbid phenomena in the body—exacerbations of fever and attacks of pain, by calling them idiosyncrasy.

Dr GEORGET gives a case communicated by Dr GOUPIL, in which there was evidently progressive derangement of mind, in a subaltern officer of the French Army. This person whose name was Meudic, aged twenty seven years, was accused of the crime of insulting language and acts of violence towards his superior officers. His conduct in the morning was marked by many inconsistencies, and his violence to his captain, whom he, after having slept out of the barracks a whole night with his mistress, had desired to see, was without motive, and thus the immediate cause of his arrest, which was accompanied by evidences of fury and estrangement of his customary affections. M. GOUPIL having instituted minute inquiries into the previous state of Meudic's mind as evinced in his conduct at different times and places towards his comrades, and the marked and peculiar physiognomical expression which he displayed during his extravagant fits, adduces the following as proofs of the insanity of this individual.

1. For many years notable changes in the character of Meudic. He had become mischievous, morose and quarrelsome: he was shunned and feared. 2. He maltreated perpetually without cause the different *fourriers* that he had in succession, he got into a passion with and struck them without having any thing to complain of. On one occasion he was desirous of cutting off an ear from one of them—at another time he made a similar attempt on sergeant Cartier. One day he wished to throw him out of the window. 3. When at Maria Louisa's, his mistress, he would from the most perfect calm often pass into a state of fury, strike her and want to throw her out of the window. 4. He used often to remain silent in the midst of his comrades, appeared lost in a profound reverie, when he would suddenly start up and commit extravagances, with an abruptness of transition as quick as lightning. 5. He carried his indifference of business so far as to neglect that of his company. His captain was often obliged to make him come to his quarters in order to force him to be occupied—he was often distracted and in a reverie, and even remained in this state when, in company with his comrades, he was to receive the orders of the adjutant major. 6. He did not rouse himself from this state of depression except to yield himself up to a noisy and lawless bustle; he then would teaze and vex his comrades, and compel them to shut themselves up in order to escape him, or to seize hold of their arms for the purpose of driving him away. He delighted in playing unexpected and often sinister tricks on them: he tried to burn the accounts of one, and set fire to the bed of another; he deluged a third with cold water during his sleep. He would pass whole hours in striking with his sword against the doors and walls. 7. During many months he slept very little; frequently he did not go to bed at all at night, and took no sleep during the day. We know that maniacs are very subject to wakefulness. 8. In no other garment than his shirt, he was exposed during the whole night to the snow; he crossed the canal at Schélestatt during a severe frost; he threw himself into it a fortnight afterwards in the same circumstances; he went down one night entirely naked into the barrack yard and had for a long time the water pumped on his head. Some months before his arrest he was desirous of taking a similar douche in the rue des Drapiers, notwithstanding the remonstrances of his friend Veriac. But what is most remarkable in this last act, is the entire forgetfulness of decency and all sentiments of modesty, which prompted Meudic to expose himself naked for three quarters of an hour in the middle of the day in the yard of a dwelling house then tenanted; and worthy of perhaps still more notice, is the attempt which he made in this state to follow Veriac whom he ran after as far as the street. These circumstances evidently shew a person to be insane. 9. Frequently when Meudic abandoned himself to these extravagances, he would vociferate, and his face become red, and eyes haggard—characters these of maniacal raving. 10. Sometimes he uttered the most unconnected opinions. We are indeed bound to consider that person raving who extols as the noblest of deaths the punishment of a soldier condemned to be shot, entertains his comrades with no other subject but his desire of thus dying, and proposes to his friends and his mistress either to blow out their own brains or to put each other to death.

A review, says M. Goupil, of all these circumstances, proves manifestly, that Meudic is deranged. All the acts enumerated characterize insanity, and they are so evident that he does not think it necessary to place them in a stronger light. In reply to the objection, that the prisoner appeared to possess habitually his reasoning faculties, did not rave, and kept his accounts, M. G. proves, by facts drawn from different authors, that there is a *reasoning madness*, such as the poet describes to have "method in it;" in which the affections take a wrong bias and lead to the commission of crime, whilst the judgment and reasoning powers are not affected to any notable extent. The tranquillity of Meudic, after his confinement, will not surprise those accustomed to the insane. Seclusion, a new kind of life, the remembrance of irregular conduct, attention excited by the preparations of trial, all these would naturally create a useful diversion from the ideas before dominant in the mind of Meudic. When visited by his counsel and M. Goupil he expressed himself with great facility and precision. Nothing esca-

ped his lips which would have induced the slightest suspicion of any disorder in his intellectual faculties. He told these gentlemen that at the moment of the coming on of a paroxysm he felt something peculiar in his head, as if the blood was in afflux to it. "*It begins*," said he, "*at the nape of the neck, and when it reaches the forehead, I know not what I am about.*" He stated that he felt himself to be in a very different state since he was in prison, and that he was *more master of his head.*

Dr GEORGET says, that M. GOUPIL is in error in asserting that the *greater number* of insane persons do not remember the violences which they have committed during their maniacal paroxysms. The reverse is so generally the case, that one is tempted to believe that the patients who say they are unable to recall to mind their past conduct do not tell the truth, either that they may avoid disagreeable questions or from some other motive.

The conclusions by which M. GOUPIL terminates his memorial are:

1. That Meudic is affected with habitual mania, usually without raving or delirium, but sometimes this latter is present: 2. That he was in a paroxysm of this disease when he committed the acts for which he was arrested: 3. That he cannot be held responsible for his actions.

These conclusions were approved of by MM. CAILLOT and BEROT, professors of the Faculty of Medicine at Strasburgh, and by M. RIESELHUEBER, physician to the Civil Hospital. Notwithstanding the forcible logic of the memorial and the weight of the authorities by which it was supported, Meudic was condemned to death by the court. The sentence was afterwards commuted for one of ten years imprisonment.

After analyzing some observations of M. COSTE, who denies that a person who tries to conceal his condition is really insane, where there is no periodical madness, Dr GEORGET goes on to say, that if almost all insane persons are ignorant of their mental disorder, there are some again, though few in number, who are sensible of the derangement of their ideas and sentiments, and who regret most feelingly their situation. Others entertain confused notions respecting their disease, and are only aware of it during their lucid intervals, or admit in part their mental alienation. Among very many which we could draw from other sources, we shall quote the case given by Dr G. On the 7th October 1826, he was visited by the wife of a brazier, of the name of Ny, who came to consult him respecting her state of mind, which caused in her the greatest anxiety. She had the appearance of good health, slept well, had a good appetite, menstruated regularly, did not suffer from any pain—nor was there any disorder in her circulation: but this woman complained of at times being seized with certain ideas which would impel her to destroy her four children, though she loves them, as she says, more than she does herself; she is then afraid of doing something sinister, weeps and is in a state of despair; and thinks of throwing herself out of the window. At such times she becomes suffused, feels an irresistible impulsion without any motive, and which is productive of general uneasiness and tremor. She has no *bad thoughts* against other children; she takes care to avoid her own—to keep away from her own house, and to stay in that of a neighbour, and to put out of the way knives and scissors. No other mental lesion is observable. This woman can work no longer in a manufactory in which she had been previously employed, because she requires the assistance of two of her children, and she is afraid to have them so near her. She is not, however, entirely idle; when she has nothing else to do she goes up and down stairs a great many times in order to divert her thoughts. This state of mind has prevailed since the 8th of September: three months before this, she had experienced great annoyance during her menstrual discharge; this continued, however, and returned with the customary regularity. She never had her mind peculiarly struck with the recital of extraordinary crimes.

M. LALLEMAND, surgeon to the Salpetriere (the hospital for insane females in Paris), prescribed for this woman bathing, decoction of valerian, and the application of a blister between the shoulders.

Suppose a little more intensity of morbid impulsion in this woman, and she would be found to have committed against her will a most horrible crime.

Again, we meet constantly with insane persons who conceal their actual condition. A madman who wishes to destroy himself employs all imaginable devices to deceive the supervision which annoys him. He will even go so far as to pretend to have abandoned his fatal project, the better finally to gain his end. Insane persons retain sufficient command over themselves to avoid all extravagances, and even to behave in a most correct manner before strangers. In illustration of this remark of Dr GEORGET's, we may instance the case of a person who has been for many years in the Pennsylvania Hospital, for insanity. We have frequently, accompanied by ladies, conversed with this person, who on these occasions always avoided the slightest approach to indelicacy of allusion or improper language—whereas when speaking to a party of his own sex, he would allow himself great latitude of remark, and at times indulge in grossness of thought and speech.

A lady, continues Dr GEORGET, imagined herself to be deprived of all feeling and affections, pretended no longer to have any want, or experience any fatigue, and compared herself to a machine, which is made to move by certain springs. Believing that she would never be restored to health, she entertained a wish of destroying herself, and made several attempts to that effect. This state was accompanied by occasional agitation, and the patient would treat her female companion with abruptness and abuse. Notwithstanding all this, the lady in question received visits, and at times passed whole evenings with persons of her acquaintance, without evincing the slightest disorder in her mental faculties.

Analogous to this is the case of the individual spoken of above in the Pennsylvania Hospital. He converses on the common topics of the day with ease and connexion, makes pertinent remarks on men and manners, and to see him, as happened to us lately, in the library with a book before him, one would be tempted to regard him as a gentleman of literary leisure—a quiet and sensible observer of events. But let the conversation be directed to the subjects of the seasons, health, sickness and death, and the monomania of this person soon shews itself. He believes that his life is interminable; and in a house where he must necessarily hear much of disease and death, he still thinks that he will be exempt from the common lot of mortals.

In the asylums for the insane, the desire, says Dr GEORGET, which is entertained by many of these afflicted persons to meet together, either at meals or in the public room or in a walk, induces them to exercise a restraint on themselves. M. COSTE would, doubtless, be much astonished, were he to spend several hours in a room, in which ten or twelve of this class of patients are playing or working, often without their allowing a single remark or act to escape, which could reveal their actual state. The reason is, because these patients *understand the interest* which they have in recreation and the enjoyment of pleasant society, rather than weary themselves in their own rooms.

A monomaniac had, among other unreasonable notions, that of believing his wife was dead, and he alleged, that the person presented to him under that name had indeed the same features, but that such a transformation as this was possible. Pains were frequently taken to combat so erroneous a belief, the falsity of which was so readily demonstrable—and on this was grounded the reason for his seclusion and medical treatment. The patient at last ceased to speak of this chimera, though he had not given it up; whenever he was brought to the point he evaded it, and said let us talk no more of that. Still, he would never admit that his wife was living, and that it was really her he had seen. He, however, concealed his opinion, as the only means of putting a stop to the persecutions under which he believed himself suffering.

Finally, we may observe in certain acts of the insane, premeditation, combination, will and foreseen results. Suicide is of this nature. The patients who wish to destroy themselves, display incredible address in discovering a suitable place, seizing the occasion and preparing the means of execution. The lady already spoken of, not being able to elude the watchfulness of the persons near her,

feigned for several weeks to have renounced her intention of destroying herself, proposed on one occasion to take a walk in a place where there was a large sheet of water, strolled for some time at a distance from it, gradually drew nearer, without seeming to notice it, but rather with the most tranquil air. Hardly had she taken some steps along the border, when she threw herself with all her force into the water. On being withdrawn, her first words were those of reproach, addressed to those who had just saved her life.

Insane people will often display their light fingered propensities, and steal with great address, hiding carefully the things purloined, and if accused affirming with great warmth that they are innocent. A patient in a madhouse had with premeditation attempted to commit a violent act on some person; and on being reproached for doing so he replied tranquilly in the following manner: "Eh, well! even if I had killed him, that would have been all, since they say I am mad." Here indeed was madness with method in it.

Believing this to be a subject of no common interest to the members of our profession as well as those of the bar, we shall return to it in future numbers of the Journal.

45. *Means of discovering Blood Stains on Arms and Clothing, and of distinguishing them from other Stains.*—Such is the title of a memoir read to the Academy of Medicine by that indefatigable medical jurist, M. ORFILA. The blood stains on iron or steel instruments may be confounded with rust spots, or those caused by lemon juice—the colour being the same, a brownish red in all. In order to accurately distinguish them, M. ORFILA recommends the four following tests. 1. Expose that part of the instrument on which is the suspected stain to a heat of 77° to 86° Fahr.; if the spot be from blood or lemon juice it comes off in scales and allows the metallic brilliancy of the instrument to appear beneath it; if it be from rust there is no alteration. 2. Scrape off a part of the stain and heat the scrapings in a narrow glass tube, above which are placed two pieces of litmus paper, one of which has been reddened by an acid; if the stain is of blood or rust, there will be a disengagement of ammonia, which restores to its blue colour the litmus paper reddened by the acid; and if the spot is caused by lemon juice, that is to say, if it is citrate of iron, there will be a disengagement of an acid product, which will redden the blue paper of litmus. 3. Let fall on the suspected stain one or two drops of hydrochloric (muriatic) acid; if it is citrate of iron or rust, it first becomes yellow, then the hydrochlorate (muriate) of iron, carried off by water, allows the instrument to be seen of its usual brilliancy, and this hydrochlorate may be discovered by the usual tests for salts of iron; if the stain is of blood there will be no change. 4. Plunge the instrument in distilled water, so that the suspected stain shall disappear in it by solution: if it is of rust it will not be so dissolved, a part only of the matter forming it is detached and suspended in the liquid, which becomes of a yellow colour, but which, after filtration, regains its transparency and does not contain a particle of iron: if the stain were of citrate of iron, it would be dissolved, give the fluid a yellow colour, and this fluid would redden litmus paper, and be proved by the usual tests to contain a salt of iron: finally, if the stain were of blood, it would be detached in reddish striæ, which could be collected at the bottom of the vessel, and not colour the liquid unless it were shaken, then the deposited matter is dissolved in water and colours it. We can then experiment as follows:—In the first place, this liquid does not colour tincture of litmus, and does not contain any salt of iron, as in the case of the stain caused by lemon juice: in the second place, the colouring matter which it contains is a colouring animal matter, since it is coagulated by heat, loses its colour, and is precipitated of a greyish white by the nitric and sulphuric acids; loses its colour, and is precipitated red by nut galls; and is at first made green, then loses its colour, then made opaline, then precipitated in whitish floculi by chlorine: and in the third place this colouring matter is distinct from all other known colouring matters, since it is not changed by ammonia. At the place where the stain was on the instrument may be detected white and slightly red filaments, which are discovered to be fibrin; this,

however, only takes place if the stain be thick. The instrument must be withdrawn from the water so soon as the reddish deposit is formed, because the contact of the air would convert it into a tritoxide of iron, which would colour both the liquid by being suspended in it and the colouring matter by being precipitated with it. Still they might be separated by the filter.

In reference to the stains of blood on clothing, M. ORFILA distinguishes two contingences. Where the stain is very thick and displays all the elements of blood, it should be dipped into distilled water; and whilst the fluid is charged with the colouring matter, which is ascertained by coagulation by heat, by the action of the nitric and sulphuric acids, nut galls, chlorine and ammonia, the fibrin remains on the cloth in the form of a reddish grey matter, the more readily recognizable as the more prolonged immersion in water will have carried off more of the colouring matter, and the cloth will be of a browner colour. Where the stain is light and caused merely by imbibition, or has been rubbed and washed, it will contain less fibrin, and we can only obtain by water the colouring matter, to be tested as already directed. M. ORFILA has made these experiments on five kinds of blood, viz. that of man, the ox, sheep, dog and pigeon.

The above is the substance of one of five memoirs presented to the Academy of Medicine by this learned professor. We shall take cognizance of the other four at as early a period as possible.

VI. SURGERY.

46. *Glutæal Aneurism—Ligature on the Internal Iliac Artery.*—In the 2d number of the American Journal of Medical Sciences, Mr S. POMEROY WHITE, of Hudson, N. J., relates the case of a man, 60 years of age and of intemperate habits, who had suffered for ten months from a tumour over the sciatic notch. On examination, in October last, no pulsation was evident—fluctuation was perceptible, and to ascertain the nature of its contents a puncture was made, which was followed by a discharge of a pint of fluid blood. The internal iliac artery was afterwards secured by an incision through the abdominal parietes,—peritoneum excepted, and by means of PARRISH's aneurismal needle and HOSACK's "knot applicator."

For four weeks suppuration was considerable: at this period the ligature came away. "The tumour has discharged its contents gradually, and the parts have assumed their natural appearance." On the 1st of December the patient was able to walk about his neighbourhood. The operation was performed on the 23d of October.

47. *Excision of the Nerve in Neuralgia.*—Medical and surgical measures have been equally extolled and perhaps equally successful in neuralgic affections. Narcotics and tonics appear to be the most promising remedies among the former. Incision of the soft parts generally, division or excision of the affected nerves, and the actual cautery have been praised by surgeons. In the *Boston Medical and Surgical Journal*, Dr JOHN C. WARREN has published some successful cases of excision of a portion of the nerve; being prompted to this operation by a knowledge of the fact that nerves which have been simply divided often reunite, and thus the operation is inefficacious. Two cases are related of division with temporary relief. The third case is interesting, and evinces not only the patience of the sufferer, but also the boldness and dexterity of the surgeon, who was happily rewarded by the recovery of his patient.

Mr S., aged 70 years, had a neuralgic affection of the face of fourteen years' standing, and for the last four years he had not been free from pain while awake, and his sleep was short and interrupted. Three operations,—two on the suborbitar nerve, and one on the anterior mental nerve,—were ineffectual. Believing that the facial nerve (the portio dura) was the seat of the disease, Dr WARREN determined to divide it *at its root*, where it issues from the stilo-mastoid fo-

ramen. "When the nerve was cut, the muscles of the face quivered and were paralyzed; but the patient said he *merely perceived* the division; that it was not attended with an acute pain, and that the principal cause of his sufferings was not reached." The pain, however, in the upper part of the face appeared to be removed.

Suspecting that the inferior maxillary nerve was concerned, the following novel operation was devised and executed by Dr WARREN. An incision was made over the side of the jaw, through the parotid gland and the masseter muscle, so as to expose the bone; this last was then perforated with a trephine, three quarters of an inch in diameter, and applied half an inch below the semilunar notch, midway between the anterior and posterior edges of the jaw. A circular piece of bone was removed in two parts—the external table by the lever, the internal by the forceps, exposing the nerve, artery and vein. "The sub-maxillary nerve being raised on a probe, the patient directly exclaimed that this was the seat of his sufferings. Half an inch of this nerve was cut out, and on examination it was found to comprehend the branch, given to the internal face of the lower jaw. The artery was tied without difficulty." "The patient said the pain of this operation could not be compared with that from his disorder. The pain, on the wounding and dividing the maxillary nerve, was most acute. On the evening of the operation he was relieved from pain, the first time for four years, and had no return of it afterwards."

Two cases of neuralgia of the infra-orbitar nerve, in each of which Dr WARREN extirpated half an inch of the nerve with permanent relief, are next related; and afterwards one of the supra-orbitar nerve, in which the operation was proposed; the patient retreated precipitately. "A considerable time afterward he came to let me know that he was entirely well, and dated his recovery from the time *he heard the proposal of an operation*."—p. 6.

48. *Extirpation of a deep seated Tumour of the Neck.*—The patient was a man of 60 years, and of a weak constitution. He was admitted into the Massachusetts General Hospital with a tumour of a stony hardness, extending from the lower jaw to the inferior part of the neck on the left side, and from the trachea to the transverse processes of the cervical vertebræ under the mastoid muscle. In the mouth, on the left side of the fauces, a tumour is also seen, extending half across this passage, and rendering deglutition difficult.

As the patient would soon have perished, it was determined, with his consent and after informing him of the dangers of the operation, at a consultation of surgeons, to extirpate the external tumour, which delicate, tedious and dangerous operation was successfully executed by Dr WARREN, although the tumour was found to embrace the common carotid artery and the pneumo-gastric nerve, and to involve other important parts. The patient rapidly recovered. The tumour on the inside of the mouth was cauterized with a hot iron, and the patient soon returned to his accustomed avocations. This operation we consider as one of the most splendid in the annals of surgery, not in consequence of its success, or of the benefit derived by the individual, but from its requiring more anatomical knowledge —more judgment—calmness—self possession—than perhaps any other dissection which the surgeon has to execute. The following details therefore from No. 2. of the Boston Medical and Surgical Journal will be read with interest. The operation was performed on the 19th of October 1827, in presence of many of the faculty and of the medical class at Boston.

"An incision was made from the ear to the clavicle, inclining forwards from the ear towards the larynx so as to uncover the middle of the surface of the tumor. This part of it was then dissected and brought into view, so as to expose the more prominent portion, which was separated from the lower jaw and the ear above, from the larynx before; and the mastoid muscle was turned back from the upper portion of the tumour, care being taken to avoid the accessory nerve where it enters the muscle.

"About this period the patient fainted twice in succession, but by inclining the head downward, he was recovered.

"The next object was to disengage the tumour at its lowest part, and ascertain its relation to the great blood-vessels and nerves. In prosecuting this part of the operation, it soon appeared that the disease extended so low, as to leave a small space between it and the clavicle. While cautiously attempting to raise the lower part of the tumor, and looking for the internal jugular vein, this vessel was found to be pushed forwards by the tumour, and bent from its course, and to be covered anteriorly by a thin layer of the tumor, which obscured its usual blue color, and confused it with the surrounding parts.

"The deep dissection of the tumor was prosecuted at the superior part of the neck. The numerous large arteries from the external carotid being situated here, it was necessary to prevent the hemorrhage from these vessels, by placing a ligature upon the carotid artery at the lower part of the neck. For this purpose the sternal attachment of the mastoid muscle was cut. Then by dissecting the sterno-hyoideus and dividing the omo-hyoideus, which was thin and red from passing through the tumor, the artery was exposed, its sheath opened, dissected, and a ligature of three threads passed around it and tied. The patient expressed no emotion at the ligature of the artery, nor did he appear inclined to faint again.

"Passing a ligature through the tumor it was drawn backwards, and thus the dissection was continued high and deep, to the side of the pharynx. In doing this, a considerable nerve, apparently the glosso-pharyngeal, was unavoidably divided. The tumor being somewhat loosened, a cord was seen proceeding out of it, towards the upper part of the neck, appearing to be a part of the tumor. This proved to be the par vagum nerve and the carotid artery. The entire extirpation of this part of the tumor was impracticable, except by a dissection which the patient would not have supported. The tumor was therefore removed in separate portions:—first the most considerable mass of it, afterwards the other portions, so as to leave a small part only attached to the vessels and nerves; this was in great part broken and detached by the fingers. In performing this part of the operation, it was perceived that when the tumor was so moved as to draw the par vagum (which necessarily happened in a slight degree), at that moment the patient had a sort of spasm or convulsion, extending from the neck into the thorax, and trunk of the body.

"In the dissection of the upper part of the tumor, the thyroid vein was necessarily cut off, and produced a bleeding which was troublesome while it lasted. This was the principal hemorrhage. Except at the beginning of the operation, there was scarcely a show of arterial blood. The skin was brought together to allow such parts as might be disposed to unite, in order to lessen the extent of the wound."

"The recovery of this patient shews what extraordinary wounds a weak, yet unirritable constitution can support. In this operation, which lasted an hour, including the faintings, the carotid artery was tied; the par vagum nerve and the internal jugular vein dissected, for a considerable extent; the accessory and sublingual nerves exposed; the glosso-pharyngeal and the descending branch of the sublingual, or descendens noni, cut off; part of the pharynx and trachea uncovered; the mastoid muscle dissected for its whole length and divided; the omo-hyoid, sterno-hyoid and sterno-thyroid, dissected, and the first divided; the digastric and internal pterygoid and other small muscles dissected; and the transverse processes of the cervical vertebræ in part exposed."

49. *Carotid Aneurism.*—Dr WARREN, on the 26th of October last, secured the carotid artery, not much above the clavicle and in its deepest situation, for an aneurism of this vessel. The patient rapidly recovered; the pulsation of the tumour continued for a number of weeks after the operation, and was attributed, not so much to the regurgitation of blood, as to the locomotion of the artery from the impulse of the heart, &c.—*Bost. Med. & Surg. Journ. No.* 3.

50. *Rupture of the Jejunum.*—In the January Number, 1828, of the Western Medical and Physical Journal, Dr DRAKE records a case of rupture of the jejunum,

caused by a kick from a horse on the left side of the abdomen. The nature of the injury before death was not evident. The powers of the system were prostrated as if by hemorrhage, and the patient survived only thirty hours. *Dissection* revealed a rupture of the jejunum, an extravasation of yellowish feculent fluid, extensive peritoneal inflammation, effusion of lymph and general agglutinations of the intestines. There had been no hemorrhage.

51. *Periostitis.*—At the sitting of the Medico-Physical Society of Florence, on the 10th of June, Dr CASSINI reported one chronic and two acute cases of idiopathic periostitis, which demanded surgical operations. From them he infers, that inflammation of the fibrous envelope of bones is the principal cause of caries, of necrosis, of atrophy, and of the absorption of bones. He advises that the tumours should be speedily opened, and he does not regard them as indicative of syphilis.—*Jour. des Progres, Vol.* 5.

52. *Fracture of the Neck of the Femur.*—On the 16th of August, M. LARREY delivered a report to the Section of Surgery, upon a memoir of M. BRULATOUR, of Bourdeaux, detailing eight cases of fractures of the os femoris. Many of the patients were cured in three months, *without deformity and without lameness*, by means of DESSAULT'S apparatus for permanent extension. One individual, ten months after his cure, died of an hæmatemesis; and dissection demonstrated that a bony consolidation of the two fragments of the neck of the bone had occurred without shortening.—*Nouv. Bibliotheq. Oct.*

53. *High Operation.*—Theoretically, it has always appeared to us, that this operation is deserving of more attention than surgeons have accorded. It is one easily performed, involving few important parts—interesting tissues of little vascularity, sensibility or irritability; admitting of free incisions for the extraction of the largest calculi,—calculi which could not be extracted by the low or perineal operation, and liable, as far as we can discover, to but one serious objection, viz. urinary infiltration. This danger it has in common with the perineal operation, and it cannot be considered very great by those who are acquainted with the histories of wounds of the bladder, and with the puncture of this viscus for a retention of urine, and who are aware of those preventive measures almost always at command.

M. AMUSSAT, we learn from the October number of the *Nouv. Bibliotheq.* has lately performed this operation twice with success, and experienced no ill consequences from the discharge of the urine through the wound—which he endeavoured to resist in one case by a suture of the bladder, and in the second by a canula; in neither case successfully. This surgeon believes "that the dangers of the high operation are less than have been imagined, and that this method is even preferable to the perineal incisions,"—"an opinion," says the editor in a note, "of many celebrated lithotomists."

54. *Syphilis treated without Mercury.*—This innovation appears to be rapidly gaining ground on professional prejudices, and to be overthrowing long established opinions and practice. A small work of 122 pages has appeared in Germany, entitled Ueber die Lustseuche und ihre Heilung ohne Quecksilber—on Syphilis and its Treatment without Mercury, by Dr FRANC. HANDSCHUH, of Munich, 1826. We take the following notice from the *Bulletin Univer. for October*, without vouching however for its historical correctness.

This is the first work in Germany, in which the treatment of syphilis without mercury is maintained from actual experiments, containing the result of the extensive military practice of the venerable BRUNNINGHAUSEN. This physician was the first to introduce into Germany the antiphlogistic treatment adopted in England; and until the present time, he appears to be its only follower, or at least, other German physicians have not published on the subject. Dr BRUNNINGHAUSEN commenced his observations in 1819, after having for thirty years, treated syphilis with mercury, and not without success in the same hospital, and in a very ex-

tensive private practice. Hence, he could readily compare the results of the two methods: the success of the new measures was great and even surprising. The experiments were continued for ten months, from the month of May 1819, to that of February 1820, until ill health obliged this veteran of the art to retire from his public situation of surgeon to the military hospital of Wurzbourgh. Dr HANDSCHUH gives the following summary of the forms of syphilis, treated during the above mentioned period.

I. PRIMARY AFFECTIONS (LOCAL SYPHILIS).

a. *Syphilitic, properly so called.*

Chancres on the genitals,	29
Buboes cured by resolution,	17
——— suppuration,	5
Patients admitted with open buboes,	3
——— with buboes ready to open,	1
Excrescences,	4
	59

b. *Accidental Affections.*

Gonorrhea,	4
——— of the glans penis,	1
Phymosis,	11
Indurations of the prepuce,	6
Excoriations,	1
	23

II. SECONDARY AFFECTIONS (CONSTITUTIONAL SYPHILIS).

Condylomata,	6
Inflammation and suppuration of the throat,	5
Cutaneous eruptions,	2
Ulcers of the skin,	3
Tuberculous (tophacés) swellings of the forehead,	2
	18
Whole number,	100

All the local affections were from impure coitus; all were cured without mercury, with the exception of four cases of chancre. In one of these cases, mercury hastened the cure; in another, the cicatrices opened at different periods after the apparent cure; in a third, complicated with an open bubo in the groin, mercury was of no utility; and in a fourth, condylomata appeared after the cicatrization of the chancres. Among the individuals cured without mercury, one only had secondary symptoms, viz. ulcerations of the skin. Secondary symptoms appeared in the greater number of cases, after the primary affections treated with mercury. These all recovered without mercury, with the exception of a cutaneous eruption in one case, managed with mercury combined with antimony.

The soldiers thus treated have been periodically examined by physicians and surgeons; and if the new method had been followed by bad consequences, these would not have remained unknown; and six years have elapsed without any such evil result having come to his knowledge.

The same antiphlogistic treatment of syphilis, without mercury, has been extensively adopted at the General Hospital at Hamburgh, by Dr FRED. GUILL.

OPPENHEIM. The number of syphilitic patients thus treated, from the 18th of July 1825 to the 1st of January 1827, is 402,—101 males and 301 females. Of these 308 had primary affections. Secondary symptoms occurred in 54 patients. Primary and secondary symptoms existed at the same time in 40 individuals.

The *local* symptoms were cured at the following periods after admission:—in 13 patients after a residence of 1 to 10 days; in 71 from 11—20 days; 53 from 21—30 days; 4 from 31—40 days; 56 from 41—60 days; 42 from 61—90 days; 18 from 3 to 4 months; 4 from 4 to 6 months; and 7 in 6 months or longer.

The *constitutional* symptoms disappeared—in *one* case from 1 to 10 days; in 8 from 16 to 20; in 6 from 21—30; in 12 from 31—40; in 11 from 41—60; in 13 from 61—90; in 2 from 3 to 6 months; and in 1 after 6 months.

Local complicated with *constitutional* syphilis was cured 3 times in 11 to 20 days; 4 times in 21—30; 5 times in 31—40; 6 times in 41—60; 11 times in 61—90; 8 times in 3 to 4 months; 1 in 4 to 6 months, and 2 after this period.

"The average term of residence in the hospital," says the reporter, "was 50 days; the mercurial treatment demands nearly double this period."—*Bulletin Univer. Oct.*

55. *Recto-Vesical Operation.*—Dr WENZEL has lately performed this operation, with complete success, on a young man aged 17 years. The calculus weighed two ounces, was three inches and six lines long, by ten lines to two inches in breadth.—*Jour. Univers. Sept.*

56. *Abscess of the Loins, discharged by the Bronchiæ.*—We learn from the Journal General for October, that at the sitting of the Academy of Medicine, on the 30th of August, an able report was made by M. HERVEZ DE CHEGOIN, on a case detailed by M. DUCASSE, fils, surgeon at Toulouse. The case was that of a peasant aged 30 years, who for six months had suffered from obscure uneasy sensations in the left side of the thorax, followed by dyspnœa, cough, fever, great emaciation, &c. &c. A swelling was perceived in the loins, diffuse and not much elevated. Regarding it as a "cold abscess" or "abscess by congestion," termed by the English a chronic or scrofulous abscess, M. DUCASSE punctured it and gave issue to two pounds of good pus, with relief. Two days afterwards, a violent cough supervened, and was followed by an expectoration of six pounds of the same kind of purulent fluid as was evacuated by the puncture. A free incision was made into the lumbar abscess, so that four pounds of matter were thus discharged, containing large flakes of sloughing cellular tissue (of coagulable lymph?).—The cough, expectoration, &c. immediately disappeared; the patient recovered in six weeks, and is now in good health.

The reporter labours to prove, that this was a case of empyema—either complicated with an abscess of the loins, or such abscess resulting from ulceration of the costal pleura and the consequent descent of the pus in the cellular tissue of the back. The diagnosis, however, must remain imperfect from the deficient history of the case; for, asks the reporter, why was not the chest examined? "That a man should cough, have a difficult respiration and expectorate pus by mouthsful (à pleine bouche), and yet not be subjected either to auscultation or percussion, in the times in which we live, is truly surprising." We record this criticism, that the profession in this country may know what is expected of them, in pulmonary diseases.

As to free incisions in these chronic collections of matter, they are not to be recommended; the valvular incisions of ABERNETHY and BOYER are superior, and the successful issue of the contrary practice, in the above case, is satisfactorily explained by the reporter M. CHEGOIN,—the opening being at a distance from the cavity of the pleura, the supposed seat of the effusion, so that air had not a ready access.

On the subject of this evacuation of pus from abscesses by congestion, M. HEDELOFFER, at the surgical meeting, recalled the advantages of applying *cups* over the orifice at each dressing so as to evacuate the whole of the pus; an improvement which promises to be exceedingly important.

57. *Cancer of the Lips.*—In the Journal General, for October, is recorded the report of MM. CHEGOIN and MERAT, on some cases of cancer of the lips, by M. ROUX, of Saint-Maximin. M. ROUX has operated on three patients with cancerous affections of the lips and sides of the face, so extensive that great deformity would have resulted by simple extirpation of the diseased portions in the usual manner. He has, therefore, put in full and successful requisition a plan practised by M. ROUX, of Paris, which consists in carrying the primary incisions to a considerable distance, and then dissecting up large flaps from the contiguous surfaces. In this way, the skin can be frequently brought over the parts originally occupied by the diseased mass, and union, by the first intention, be often effected, so that comparatively little deformity will result. We consider the operation as simply a modification of the Taliacotian practice, but at the same time valuable in preventing a disgusting deformity, and often in preserving the functions of the lips and tongue, in some of these hapless cases of extensive cancerous disease.

58. *Wounds from Rabid Animals.*—In the Journ. General, Oct. is recorded a case of hydrophobia in a female, six weeks after the bite of a mad dog. The wound had cicatrized: the cicatrix did not become sore or red. The patient died on the third day. No appearance of phlyctænæ could be discovered under the tongue. *Dissection* shewed inflammation of the tongue which was slightly covered by a false membrane; a very small pustule was noticed under the left side of the tongue. The false membrane could be traced into the œsophagus; the mucous follicles were enlarged, the œsophagus contracted but very slightly phlogosed. Some slight inflammatory exudations were found in the stomach and duodenum. Other abdominal viscera and the brain were natural. The spine was not examined.

On the 11th of Feb. 1826, at Tykocin near Lomza in Poland, twenty-three individuals were bitten by a mad wolf; many very severely. The patients had their wounds kept suppurating for six weeks, were rubbed with mercurial ointment, and took internally belladonna, and the meloe majalis, or as a substitute, the meloe vesicatorius, in powder.

Of the twenty-three individuals, two died of their wounds and five from hydrophobia. Precursory symptoms of the disease appeared in four cases, but were dissipated by large doses of the extract of belladonna.

The first of the cases of hydrophobia was a man aged fifty years, who was attacked on the thirty-ninth day; the second was a boy, aged thirteen, who sickened on the forty-first day. Some days afterwards a female and two labourers became the subjects of the disease. All died on the 17th or 18th day from the occurrence of the symptoms.

The sixteen individuals, who experienced no evil consequence, remained well in July 1826. This extract is made from the *Journ. der Pract. Heilkunde.* Dec. 1826, by the editor of the Journ. General.

59. *Ligature of the Subclavian Artery.*—In the Medico-Chirug. Rev. for Jan. is recorded a case of axillary aneurism successfully managed by Mr ROBERT THORPE of Manchester. Thomas Whanby, æt. thirty-six years, was admitted into the Manchester Infirmary, April 16th 1827, with a pulsating tumour of a year's duration in the axilla. On the 21st of June, the subclavian artery was secured above the clavicle in the usual manner; no difficulty was experienced in passing the ligature by means of the common aneurismal needle. The operation lasted but fifteen minutes and not more than ℥ii. of blood were lost. The patient did well until the night of the 2d of July, when he *awoke suddenly* and felt blood running down his breast. He lost about ℥xxx. when fainting ensued and the bleeding ceased. On the 4th of July, the ligature came away, there was no recurrence of the hemorrhage and the patient left the Infirmary on the 3d of September, quite well. "To watch the gradual return of the circulation was in this case exceedingly interesting. In eight hours a tingling sensation, which had lasted from the time that the ligature was tied, now subsided; and a burning

heat supervened, or, as the man expressed himself, 'it felt like a fire between his shoulders and along his neck,' accompanied, now and then, with a feeling as though cold water was trickling down his arm, even to his fingers. Twenty-four hours after the operation the arms were both of the same temperature, 99°. After the lapse of forty-eight hours, the patient could discriminate which finger was touched; yet it is rather singular, that the thumb was most benumbed, though perhaps the most vascular. On the 6th of July, I discerned a pulse in the brachial artery, but I have not been able to feel any pulsation in the radial up to the present time, Oct. 25th 1827. The man is now daily at work having complete use and power of the aneurismal arm."

60. *Mr Wardrop's Case of Ligature on the Subclavian Artery for Aneurism of the Arteria Innominata.*—At p. 227, in the last number of this Journal, we gave some particulars of this bold operation. In a postscript to the January number of the Medico-Chirurgical Review, we find some further statements, unfortunately very contradictory. For example, Mr WARDROP states, on the fifth of December (five months after the operation), that, with the exception of a slight attack of bronchitis, which she had about a fortnight ago, the woman has continued to improve progressively ever since the operation, and that she is now perfectly cured. The reviewer, Dr JOHNSON, affirms, that he visited the patient, Mrs Denmark, on the twelfth and on the sixteenth of December. "She was still alive and may continue to live for some days." "There is aneurism of the aorta or the innominata, in a very advanced state, pressing on the bronchiæ and the root of the trachea." It is not easy to reconcile such assertions from reputed gentlemen of a liberal profession, except, perhaps, upon the supposition that Mr W. confined his remarks to the aneurismal tumour of the innominata, which is said to have disappeared, and to the effect of his operation. We may look for further light on this interesting subject.

61. *Luxation of the Cervical Vertebræ.*—At the session of the Academy of Sciences, November 12, 1827, MM. BOYER, CHAUSSIER and DUMERIL reported on two cases of luxation of the cervical vertebræ, said to be successfully reduced by M. BARLI, physician at Limoges. Paralysis of the lower extremities is said to have existed and to have been immediately cured by the operation of reduction. M. BARLI promises to present very soon a simple apparatus for the *reduction of the luxations of the vertebra dentata!!*

BOYER pronounces the cases unworthy of the attention of the academy—contradictory to the fundamental principles of surgery and absolutely absurd. The report and conclusions of BOYER were adopted.—*Jour. Général for December.*

62. *Rhinoplastique,—Taliacotian Operation.*—M. DELPECH, professor at Montpellier, has performed this operation twelve times, with what success is not stated. He gives the following rules.

That the nose should not be made from the skin of any other part than the forehead, as there is not a sufficient similarity of structure.

That the form of the flap should resemble a trident, which form will allow the edges of the frontal wound to be so approximated, that the cicatrix will be linear. M. DELPECH advises that the points of the flap should be accurately fixed by sutures. He scarifies the borders of the nares and has no hesitation in denuding the rest of the cartilages, but objects to the insertion of lint or of any foreign substance under the flap, as aggravating the inflammation and endangering gangrene. M. DELPECH makes the flap as long as possible, by carrying the incisions into the hairy scalp,—hence there is less danger, on twisting the flap, of interrupting the circulation, and when the remaining connexion is separated, it is more easy to give the upper extremity a pointed shape, which is always desirable. The summit of the flap is, however, not to be divided, until the cicatrization is complete.—*Jour. General, Dec.*

63. *Lithontrity.—In the Annal. de la Med. Phys.* are recorded more in detail, M. AMUSSAT'S cases of high operation for stone (vide above No. 53) and also a case of calculus in a man 60 years of age, who was successfully submitted to the new operation for breaking the stone or *true lithotomy*, the credit of which is given to CIVIALE, but to which M. AMUSSAT, among others, lays claim.

From the Archives General. for December, we learn that M. LISFRANC, with a commendable liberality, placed two of his calculous patients under the care of M. CIVIALE, that they might be subjected to lithontrity. The first was a child seven years old. Some flexible sounds were introduced into the urethra before the operation: after which the lithontriteur—two lines in diameter, was easily passed; the stone, about the size of a filbert, was quickly seized and, although composed of oxalate of lime, was quite friable. At the end of three days, the first fragment engaged in the urethra was extracted; the trituration was continued every second day, and the patient was promptly cured. The *second case* was a sexagenarian, who had been cut for the stone when 12 years of age, and who had a fistula as the result of the operation. Again suffering from a calculus for fifteen months, he was freed from it by M. CIVIALE, at five sittings. We fondly hope that these cases and the valuable publication of our friend, Dr LA ROCHE, who was an eye witness of CIVIALE'S operations, contained in our last number, will stimulate some of our American surgeons to introduce the improvement of CIVIALE into general use among us. What has so often been done in France, and what DUPUYTREN and LISFRANC have sanctioned, ought surely to be attempted in America.

The Edinburgh Medical and Surgical Journal, January 1828, contains an account of the first patient in that country (Britain?) who has been the subject of lithontrity. The patient, Peter Runiman, æt. 62, was first operated on by Mr LISTON, on the 26th of September last. "The stone was at once seized, drilled, slipped, caught and drilled again without the patient complaining of any but slight pain." The operation was repeated on the 9th of October, the 18th, 27th and 31st, and also on the 6th, 13th and 17th of November, with various success. The patient, not satisfied with so tedious a method, at last consented to lithotomy, which was successfully executed in three minutes on the 25th of November. He soon recovered. The stone was of a flat spheroidal form, two inches and a quarter in length; in breadth one inch and three quarters; in thickness eight-tenths. The marks of twelve drillings are distinctly visible—one had passed entirely through. "Had the calculus, though of an unfavourable shape, been less hard and tenacious, it must have been destroyed by the fourth or fifth operation."

64. *Gonorrhœa.*—That this disease consists in an inflammation of the mucous membrane of the urethra, few doubt; but whether there is any peculiarity in the inflammation, originating from a specific virus, is yet in dispute. This is, of course, decided negatively by BROUSSAIS who admits of no modifications of inflammation by its causes, and in the October number of his Annales de la Med. Phys. we find three cases reported by M. HUTIN, of venereal gonorrhœa, two of which were treated by an abstemious diet, general bleeding, leeches and emollients. One patient was perfectly cured on the ninth day, and the second on the fifth day. The third case was at first treated by balsam copaiba, turpentine, cubebs, &c. &c.: a gleet resulted. The patient at length submitted to a severe regimen and antiphlogistics; and on the sixteenth day of this practice, "there remained not the least trace of a running which had continued for four months."

65. *Lithotomy.*—M. SOUBERBIELLE informed the Section of Surgery, that since the publication of the work of M. BELMAS, he has, seven times, successfully performed lithotomy; six times above the pubis, and once by the perineum. One of the six patients was 77 years of age.—*Archiv. General. for Nov.*—Our readers recollect that M. S. has the credit of reviving the high operation.

66. *Caries.*—Dr JOHN INGLIS NICOL, in the January Number of the Ed. Med. and Surg. Jour. has published an interesting essay on caries, recommending very strongly the internal use of the sarsaparilla, occasionally assisted by alterative doses of mercury, by antim. tartariz. by vinum colchici, and the external application of the solid nitrate of silver directly to the diseased bone or periosteum. This application he regards as only inferior to actual excision of all the diseased mass, an operation not always practicable, and to which few will submit. Cases very satisfactory are detailed.

67. *Artificial Joint.*—In the New York Med. and Phys. Jour. No. 24, Dr J. KEARNEY RODGERS relates the case of an ununited fracture of the os humeri, of more than two years and a half duration, and in which the seton was twice employed (once for six months), but failed in exciting ossific union. Dr R. resorted to M. WHITE's operation of excision of the ends of the fragments on the 31st of July 1827. *Oct. 8th*, Sixty-nine days after the operation, the fragments had united. *Oct. 16th*, The union was firm. *Dec. 3d*, The patient has regained every motion of the arm; the os humeri is two inches shorter than that of the sound side.

68. *Axillary Aneurism.*—In the *February* number of the London Med. and Phys. Journ. another case of successful application of a ligature to the subclavian artery for axillary aneurism, is recorded. The operation was performed by Mr BRANSBY COOPER, on Tuesday, Dec. 4th, 1827. The patient did well.

VII. MIDWIFERY.

69. *Gestation.*—Dr MERRIMAN has met with a few cases in which he had reason to believe that the period of delivery, dated from the last appearance of the catamenia, has exceeded forty-four weeks, or 308 days.—*Lond. Med. and Phys. Jan.*

70. *Labour artificially excited.*—Reference to the October (1827) No. of this Journal, p. 431, will give the opinion of M. KERGARADEC, as to the propriety of exciting labour under certain circumstances, as stated in a report to the French Academy of Medicine, which report was adopted. The committee maintain, that *there is no case in which an abortion should be excited in a pregnant female.* "The healing art," says the reporter, "should never become a homicidal art." This opinion thus given has great weight; but, as is well known, is contrary to the practice of physicians in this country, in England, in Germany, Holland, &c. in certain extraordinary cases. We have already in this Journal, at p. 408, Vol. 3, and p. 236 of the present volume, recorded successful cases. For the following summary of this practice in Germany and Holland, we are indebted to the Bulletin Univ. for October.

Prof. VROLIK, of Amsterdam, gives the case of a woman aged 43 years, having the sacro-pubic diameter three inches and three lines, and being at the end of the eighth month of her first pregnancy, in whom premature labour was undertaken on the 18th of Feb. 1825. The child was born on the 21st of Feb. Fifty-five hours after the puncture was made the uterine contractions ensued, and in six hours labour was completed. The fœtus was alive after the puncture of the membranes, but was dead born.

Dr KELSEH, of Frankfort on the Oder, details the case of a female aged thirty-two years, becoming pregnant for the third time January 4th, 1826, and who was afterwards attacked with a fungus hematodes of the right mamma. This disease appeared to be aggravated by the uterine irritation, and Dr K. therefore, at the end of the eighth month, the child living and the pelvis natural, proposed a premature labour. This was agreed to, but labour at this time suddenly and

spontaneously ensued. It was of no advantage: the patient soon died hectic. Dr K. thinks, even in this case, the operation would have been proper.

Professor RITGEN gives a history of the cases of labour artificially excited in the Lying-in Hospital at Giessen. He notices nineteen instances from the year 1818 to 1822, inclusive. Of these twelve were excited before, and seven after the full period of gestation. In six cases of the twelve, the operation was performed during the last ten or fifteen days of pregnancy; in four, in the thirty-eighth week; in one during the thirty-third; and in one in the thirty-first week. The duration of the labours varied from a few hours to several days. The infants of the twelve accouchemens were born alive, with the exception of one child, which was lost by turning. Of the eleven living children, two died, one from weakness, the other from disease of the lungs. Nine left the hospital with their mothers, all in good health. The indications for operating in these cases were the narrowness and irregularity of the pelvis; the sacro-pubic diameter varying from two inches and nine lines, to three inches and six lines.

In the seven accouchemens excited after the full period, (why—is not stated in the Bulletin) the sacro-pubic diameter was generally natural—all the mothers were saved, but one child died apoplectic the fourth day after birth.

The reporter in the Bulletin gives an historical notice of this operation, stating that it was performed by MACAULEY and KELLY, in 1756, in England; by professor FRANC. ANT. MAI of Heidelberg,—the first upon the continent, in 1799. In 1800, the question was discussed in a German journal, entitled Altenburger Medizinische Annalen. In 1818, it was there revived by Drs WENZEL and FRORIEP. In 1819, Dr HARRAS published an essay at Berlin: and in 1820, Dr ULSAMER presented a dissertation to the public at Wurtzbourg; and relating the case of a child surviving, although born in the twenty-fifth week (sixth month) of pregnancy: in the same year appeared an interesting memoir of professor REISINGER, of Landshut. Other essays and monographs have been published by Dr PRELLER in 1822, at Halle, in 1824 by Dr KELSEH at Berlin, by professor KLUGE, and by professor SIEBOLD of the same place, in his Journal für Geburtshülfe. Professor NAEGELE of Heidelburg—professor D'OUTREPONT at Wurtzbourg—Dr SCHILLING of Bamberg—professor MENDE and Dr SALOMAN of Leyden, have all resorted to the operation for exciting labour with a success more or less complete.

From these sources, may be deduced the following *general results*. Of thirty-six cases reported, more than half were first labours; in four cases, the operation was performed, ten or fifteen days before the full period; six occurred in the thirty-eighth week; six in the thirty-seventh; five in the thirty-sixth; three in the thirty-fifth; four in the thirty-fourth; one in the thirty-third; one in the thirty-second; one in the thirty-first; and finally, one in the thirtieth; the details of two others, reported by professor NAEGELE, are not known. The shortest interval between the time of puncturing the membranes and the birth of the child was thirteen hours and a half—the longest, six days. The forceps were applied in six cases, and once the cranium was perforated. Of thirty-four infants, nineteen boys and fifteen girls, six died before birth—nine died a few hours or days after birth (one of these however should be excepted, as it died of variola). Hence twenty infants were preserved out of thirty-four; and including the two of professor NAEGELE, twenty-two out of thirty-six.

This is a more favourable report than that from England by SHERRIMAN, who out of thirty-eight cases, preserved but nine children—twenty-one were still-born; the greater part of these presented unfortunately at the superior strait.

The report is also more favourable than that of Professor REISINGER, drawn from English and other authors. In 74 cases 30 infants were born dead; of the 44 living children, 3 died soon after birth; 20 certainly lived; of the remaining 21 nothing is positively known, from the incomplete reports given.

Of the 36 cases above alluded to, 34 mothers perfectly recovered, and two died, but not from the operation, for one perished from a dropsy pronounced incurable, and the other from acute pneumonia.

The operation of artificial labour has been opposed by Dr PIRINGER in a dis-

sertation, published at Vienna in 1826, and by professors JŒRG of Leipzig, and STEIN of Bonn.

So far from the Bulletin. Professor JAMES has politely furnished us with the following information regarding the experience of English accoucheurs, and has referred us to the first volume of the Eclectic Repertory, p. 105, for the only account, as far as we know, which has been published in this country, of labour artificially induced. We will furnish an abstract of the case.

According to Dr DENMAN, the first account [in England] of any artificial method of bringing on premature labour was communicated to him by Dr Kelly. In the year 1750 the propriety of the plan appears to have been sanctioned by a consultation of the most eminent practitioners in London.

Dr DENMAN says, that in more than twenty cases, in which he had either performed it himself, or it had been done by his advice or persuasion, he has not known one untoward or hazardous accident that could be imputed to it, and in the greater number of those cases the children have been born living, while it has been perfectly safe to the person on whom it has been performed.

Dr MERRIMAN states, that out of forty-seven instances of distorted pelves in which the operation had been practised, at least nineteen children had been born alive and capable of living.

In June 1804, Dr JAMES was called in consultation to a lady in labour with her first child. Dangerous symptoms supervening, and the pelvis being preternaturally small, she was delivered by the crotchet. In August 1809, she was a second time delivered by the same means; the patient and her friends had repeated to them an opinion formerly given, that she could not be delivered of a living child at the full period. In 1810 she was again pregnant; premature labour was proposed and agreed to, at the end of the seventh month of utero-gestation. On the 27th of June the membranes ruptured in the evening, and on the 29th, at half past 10, A. M. she was delivered of a living female child. The infant lived to the 19th day, and died, partly from mismanagement in the nursing. The mother happily recovered.

Dr JAMES informs us that "the same individual [Mrs O'Brien] becoming again pregnant, it was determined, in consultation, to bring on premature labour at the expiration of seven months from conception, which took place on the 18th December 1816. She was then delivered of a living male infant without any unpleasant circumstance attending, having been but three or four hours in labour. The child lived about ten days and took the breast, but then died.

"The next time she became pregnant, premature labour was induced at seven and a half months from conception. The child survived and appeared likely to do well, as long as the writer had any knowledge, for a year at least."

71. *Difficult Labour.*—Professor OSIANDER, of Gottingen, relates a case of labour, in which great delay and difficulty were experienced in delivery from the enormous size of the abdomen of the fœtus; the breech presenting. The child died immediately after birth, and dissection exhibited the kidneys exceedingly enlarged, being of the adult dimensions.—*Archiv. General. Nov.*

72. *Amputation of the Uterus.*—M. LISFRANC has performed two new amputations of the neck of the uterus with success. He announces to the Academy of Medicine, that the female who conceived, fifteen days after a similar operation, and who was safely delivered at the full period of utero-gestation, (Vide Vol. III. p. 402, and Vol. IV. p. 191, of this Journal) is again three months advanced in pregnancy.—*Archiv. General. Nov.*

73. *Spontaneous Evolution of the Fœtus.*—Dr DENMAN is said to be the first English physician who noticed that in some "cross presentations," in which the side, arm or shoulder presented, a change was gradually effected, so that the arm receded, and the nates were forced down by the powerful contractions of the uterus. In the London Med. and Phys. Jour. for *February*, Mr GEORGE JEWEL, Esq. denies that such an evolution ever occurs—"that when the arm of the child is protruded into the vagina, it never again recedes to make room for

the nates or any other part." In confirmation of this assertion, he relates two cases of arm presentation, in each of which, without any retraction of the extremity, the body of the child was forced through the pelvis, doubled on itself: the head being subsequently expelled.

We would suggest, that it can hardly be considered a legitimate deduction, that because a child can be born double, therefore an evolution never can occur.

74. *Removal of the Placenta.*—In the London Med. Repos. for *February*, Mr Edward Thompson cautions us against acting, in all cases, on the rule, that the placenta may safely be withdrawn, when not only the insertion of the funis but the whole circular edge of the cake can be distinctly felt; for cases have occurred to him, in which part of the placenta under these circumstances remained adherent even to the fundus uteri. Its forcible removal would, in such instances, produce an inversion of the uterus.

VIII. CHEMISTRY AND PHARMACY.

75. *New Method of preparing the Deutoxide of Barium.*—Our readers will recollect, that in our last number, we noticed the coincident observations of Mr Phillips, of London, and Mr now Dr Bridges, of this city, on the residuum of nitre, after exposure to a red heat; this residuum being evidently the deutoxide of potassium. It appears by the September number of the Journal de Chimie Médicale, that M. Quesneville, Jun. has resorted to an analogous process for obtaining deutoxide of barium. This chemist exposes the nitrate of baryta to a red heat in a luted porcelain retort. Upon operating on two pounds of the dried nitrate of baryta, he obtained a pound and a half of deutoxide of barium, containing no trace of the nitrate of the earth. This process for the deutoxide enabling the operator to make it in larger quantities at a time than by the old process, we may expect that oxygenated water, which is formed by means of this substance, will become less expensive, and consequently more extensively used in the arts.

76. *Formation of Adipocere.*—We publish with pleasure the following interesting note respecting the conversion of dead bodies into adipocere, addressed to one of the Editors of this Journal, by Dr Richard Harlan, of this city, a gentleman advantageously known to the scientific public, for his researches relating to human and comparative anatomy.

"The following fact, though an isolated one, may not be unimportant to those who are interested in animal chemistry.

"During the summer of 1824, whilst superintending some anatomical preparations at my dissecting rooms in Hartung's alley, I had occasion to macerate a cranium. For this purpose I directed the head of a large fat negro, who had died of acute fever, to be placed in a barrel half filled with water, and closely covered over. On examining the process about six weeks afterwards, with the expectation of finding the maceration completed, I was somewhat surprised to observe the head floating buoyantly on the surface of the water, lying on one side. The air of putrefaction, disengaged within the cranium, most probably raised it to the surface. The upper surface, or that which floated above the water, presented a tumid appearance, and on cutting into it, the whole substance down to the bone was completely converted into adipocere. That portion of the head and face, on the contrary, immersed in the water, was found putrid and macerated.

"Those bodies in which this change has occurred in the cemeteries of this city, such at least as have come under my observation, have been interred in a soil of clay, with a layer of gravel or sand superimposed, the water percolating down to the clay, which confines it in the vicinity of the body, which rests on the water.

"It would appear that bodies, once converted into the matter of adipocere, resist decomposition for a long period. The body of a female, lately disinterred by the relatives, from a burial place in this city, six years after death, had undergone a complete change into a substance of this nature, and was so solid and heavy, as to require the united efforts of several men to raise it from the grave. The eyes were sunk, and the lids of a white waxy appearance, but nothing like actual decomposition had taken place. Such other portions of the body as were accidentally exposed to view, were of the colour of tallow, or dirty wax."

77. *Human Bezoar.*—M. CAVENTOU has reported to the French Academy of Medicine, the result of his examination of a concretion of this nature. It weighed one hundred and eighty-six grains, and measured two and a half inches in circumference. Its colour was bluish-gray, interspersed with white spots, and its shape spheroidal. It had no smell exteriorly, but interiorly it had the smell of the yolk of an egg which had been slightly roasted. Its fracture exposed a surface, having the appearance of needle-formed rays (flattened, and of a pale yellow colour), which extended from the centre to within one-fourth of the circumference, and which were surrounded by thin layers, having the same appearance as the central portion, but of a deep green colour. It melted like a fatty body, but at a temperature much higher than that necessary to fuse other bezoars. Upon analysis, it was found to consist entirely of cholesterin. M. CAVENTOU considers it probable, that it was formed on a small biliary calculus as a nucleus, around which were gradually deposited successive layers of green bilious matter. It was voided by a female aged 56 years, during a fourth attack of iliac passion. Its expulsion took place during the occurrence of diarrhœa, and was followed by the complete recovery of the patient.—*Annales de la Médecine Physiologique, Fevrier* 1827.

78. *Chemical Nature of the Matter of Melanosis.*—In Vol. III. page 412, of this Journal, we gave an abstract of the experiments of Dr HENRY on this matter, which led him to consider it as a morbid secretion, analogous, in some of its properties, to the colouring matter of blood.

It would seem, however, that the matter of melanosis was examined chemically in 1819 by Messrs BARRUEL and LASSAIGNE, independently of each other, who agreed in considering it a peculiar morbid secretion, containing all the ingredients of the crassamentum of blood; namely, fibrin, a little albumen, colouring matter, identical with that of the blood, and in short, the alkaline salts, and oxide of iron, which form the fixed parts of this animal liquid. In no case, does this matter exhibit traces of organization.

In the June number of the Journal de Chimie Médicale of last year, two accounts are given of morbid productions of the nature of melanosis. One relates to a blackish matter, obtained from the right ovary of a woman, who died of cancer of the left ovary, and is given by M. LAUGIER; the other, to a melanic production formed in the venous blood of the horse, and is furnished by M. LASSAIGNE. The chemical examinations made by these gentlemen on the morbid products mentioned, proved them to be identical with melanosis matter, as found in other parts of the system.

In 1826, M. LASSAIGNE published an analysis of a black liquid, vomited by a female suffering under a cancerous affection of the stomach. This liquid proved to be identical, in chemical composition, with the matter of melanosis. In the July number of the Journal above cited, there is given an analysis of a black liquid, vomited in a case of diseased stomach, performed by M. COLLARD DE MARTIGNY. This analysis coincides, in most particulars, with that of M. LASSAIGNE.

It would appear, therefore, that as far as observations have gone, black degenerations, whether solid or liquid, are analogous in chemical composition; consisting of the ingredients, somwhat altered, of the crassamentum of the blood.

It is not improbable, that the black vomit analyzed by LASSAIGNE was identical with that which is ejected in yellow fever. If it should prove to be so, the conjectures of two of our distinguished physicians, will not appear wide from

the truth. The late Dr RUSH was accustomed to consider the yellow fever black vomit as an altered *secretion*, while Dr PHYSICK is of opinion that it is effused *blood*. Now M. LASSAIGNE considers the different kinds of melanosis to be a morbid *secretion*, containing the constituents of the crassamentum of the *blood*.

79. *Calculus containing Mercury.*—In the Journal de Chimie Médicale for May last, we find an account of a calculus, extracted from a tumour, situated in the right hypochondrium of a woman, and which followed a course of remedies for the cure of the venereal disease. Seven-eighths of its weight consisted of cholesterin. But what is very remarkable, it contained mercury, globules of which were readily detected when the central portion was broken, and exposed to a heat of about 68° Fahr. M. LACARTERIE, one of the professors of the hospital of Lille, is the author of the above observation.

80. *Denarcotized Laudanum.*—In 1803, DEROSNE discovered a crystalline substance in opium, to which he gave the name of salt of opium. In 1817, SERTUERNER, of Eimbeck in Hanover, made known the existence of a narcotic alkaline principle in opium, to which he assigned the name of morphia. He ascertained that it was naturally combined in the opium with a peculiar acid, for which he proposed the name of meconic acid. SERTUERNER was led to suppose that the salt of DEROSNE was in fact his meconate of morphia; but ROBIQUET has shown, that this is a mistake, and that the salt of Derosne is a peculiar and distinct principle, to which he has given the name of narcotin, and which may be obtained, nearly pure, by acting on opium by ether.

Considerable difference of opinion exists between Messrs ORFILA and MAGENDIE, the principal physiologists who have experimented on narcotin, as to its action on the animal economy. MAGENDIE considers it as the exciting principle of opium; while ORFILA asserts that it produces nausea, vomiting, debility, and an accelerated circulation, without the affection of the senses, palsy of the extremities and convulsions, which arise from an overdose of morphia.

It would seem at least, that these physiologists agree in ascribing to narcotin very unpleasant effects, which are totally distinct from the anodyne impression. In consequence of the views entertained by MAGENDIE, ROBIQUET undertook to prepare an extract of opium, freed from narcotin, the formula for which is given in MAGENDIE's formulary, under the name of *extractum opii, narcotinâ privatum;* and the result of its exhibition corresponded with the previous views of this physiologist, who employed it in practice with advantage.

With the view of attaining the same end, of excluding the narcotin, Dr HARE, in the May number of the Philadelphia Journal of the Med. Sciences, has proposed a preparation under the name of denarcotized laudanum, which he prepares in the following manner:

Shave some opium by rubbing it on the face of a jack-plane. Subject it, four times successively, to as much ether of the specific gravity of .735, and kept nearly at the boiling point, as shall be sufficient to cover it, allowing each portion to act for twenty-four hours. By this treatment, the opium is deprived of its narcotin, it being dissolved by the ether. Next, subject the denarcotized opium to as much duly diluted alcohol as would have been sufficient to convert it into laudanum, had it not been subjected to the ether.

Dr HARE subjoins a letter from Dr DEWEES, by which it appears, that the denarcotized laudanum possesses advantages over the common laudanum, thereby confirming the views of MAGENDIE as to the importance of excluding the narcotin.

Denarcotized opium is prepared in quantities by Mr J. P. WETHERILL, a scientific manufacturing chemist of this city; and may be obtained at the store of Mr S. P. GRIFFITTS.

81. *New Formula for obtaining Morphia.*—The following modified formula

for the expeditious preparation of morphia, with the accompanying remarks, has been kindly communicated to us by Dr EDWARD STAPLES of this city.

"Every formula for the preparation of morphia results in the precipitation of that substance, in the first instance, intimately blended with a large portion of colouring matter, from which it is difficult to separate it in a state of purity. In that of M. ROBIQUET, which is most generally followed, the water directed is inadequate to dissolve all the meconate of morphia present in the opium, while the proportion of magnesia to be employed to precipitate the morphia, is variously stated from a few grains to as many drachms. The annexed formula is a modification of that in which the acetic solvent and ammoniacal precipitant are employed. It causes a gradual precipitation of the morphia in a crystalline form, which requires only to be washed in a small portion of cold diluted alcohol, and then to be dissolved in boiling alcohol, to obtain it pure.

"*Formula.*—Subject four parts by weight of opium in coarse powder to the action of three parts of acetic acid, diluted with three parts of water, for twenty-four hours, at a temperature of about 70° Fahr. Add eight parts of alcohol of 35 Beaumé (sp. gr. .842), and continue the digestion for twenty-four hours longer, raising the temperature by means of a water-bath to 160°. Next decant the liquor while hot from the opium, and submit the undissolved portion to the same treatment as first directed. Mix the highly coloured acidulous tinctures together and filter, and then add alcoholic ammonia of such a strength as to cause no change in the transparency of the tincture at the moment of addition*. After the lapse of a short time, crystals of morphia will begin to fall, which must be washed in a small portion of cold diluted alcohol, and dissolved in boiling alcohol, as already mentioned, to render them quite pure. On account of the lightness of the alcoholic ammonia, it is best to add it by means of a glass tube, extending to the bottom of the vessel."

Dr STAPLES has stated to us that the crystalline precipitate of morphia, caused in his process by the alcoholic ammonia, is much freer from colouring matter than that obtained by means of ammonia used in the ordinary way. From all the facts, it would seem that the advantage of Dr STAPLES's process is, that the alcohol, associated with the ammonia, while it does not prevent the latter from slowly precipitating the morphia, is the means of holding in solution a considerable portion of the colouring matter, which would otherwise fall and greatly contaminate the product.

Dr STAPLES states that, by the above process, he has obtained ninety grains of morphia from a quarter of a pound of opium of medium quality. We would recommend to country practitioners to give their attention to Dr STAPLES's process, as we have reason to believe that it furnishes an easy and expeditious method for obtaining this important vegetable alkaline principle.

82. *Chemical Facts respecting Cinchona.*—M. GUIBOURT states, that a cold infusion of good cinchona bark is precipitated abundantly by sulphate of soda. When, however, the attempt is made to filter, the precipitate is wholly redissolved. M. GUIBOURT supposes, that there are formed the sulphates of quinia, and of lime, by double decomposition between the sulphate of soda and the kinates of quinia and lime. If ammonia be added to the liquor, a precipitate is formed. M. PELLETIER remarks, that watery extracts of cinchona afford but little quinia when treated with magnesia, and that the residual bark, from which such extracts have been made, still contains a good deal of this alkaline principle. The extracts, however, contain more quinia and cinchonia than can be obtained from them; as the other elements of the bark so envelop these alkaline principles, as to make it difficult to separate them completely.—*Archives Générales de Médecine, March* 1827.

---

* "Three parts of alcohol to one of strong water of ammonia are about the proportions to be used."

83. *Proportion of Sulphate of Quinia furnished by different samples of Bark.*—Messrs PELLETIER and CAVENTOU, the discoverers of quinia and cinchonia, made some remarks to the French Institute, on the proportion of sulphate of quinia obtained from Peruvian bark. The different barks are by no means equally rich in quinia. Some Calisaya barks yielded to these chemists sulphate of quinia in the proportion of two hundred and two grains to the pound avoirdupois, which contains seven thousand grains. Other samples, of inferior quality, furnished only one hundred and nine grains of the sulphate to the pound. The mean product of a pound of bark was one hundred and sixty-four grains. In all cases, the sulphate of quinia obtained was identical.

The above results give the following proportions per cent., viz.

Good Calisaya bark yielded two and nine-tenths per cent. of sulphate of quinia.

Inferior kinds gave one and a half per cent.

The average product was two and one-third per cent.

In the above abstract, we have converted the French into English weights, as being more familiar to our readers.

84. *Oxalate of Potassa-and-Antimony.*—In the Journal de Chimie Médicale for June last, it is stated that M. LASSAIGNE has formed a double oxalate of potassa-and-antimony, by boiling in water a mixture of equal parts of quadroxalate of potassa, and finely levigated glass of antimony. The new salt crystallizes in needles, arranged in a stellated form. It is more soluble in cold water, but less active than tartar emetic.

85. *Method of preventing the Precipitation of Iron from Chalybeate Waters.*—In the Journal de Chimie Médicale for Jan. 1827, there is a note on this subject, taken from HUFELAND's Journal of Practical Medicine. The plan consists in fixing in the cork of the bottle containing the water, an iron nail, or wire, sufficiently long to dip a little way into it. By this simple contrivance, chalybeate waters may be transported to any distance in bottles, without the least precipitation of the iron.

86. *Mode of distinguishing Arrow-root from Wheat or Potato Starch.*—Mr VIREY states, that ten grains of wheat or potato starch will form a pretty thick jelly with two ounces of boiling water; while the same proportion of arrow-root forms a thin liquid.

MISCELLANEOUS.

The New England Journal of Medicine and Surgery, after a useful existence of seventeen years, has been discontinued; its property and its influence have been associated with the Boston Medical Intelligencer—and a new work, commenced by the joint patrons and proprietors, has appeared under the title of the *Boston Medical and Surgical Journal.* This is issued in weekly sheets, and from the specimens already afforded, promises to be a valuable periodical publication.

The Philadelphia Monthly Journal of Medicine and Surgery, edited by NATHAN R. SMITH, M.D. late Professor in the Jefferson Medical College, now Professor in the University of Maryland, has been merged in the American Journal of Medical Sciences, issued by Carey, Lea & Carey.

The State Medical Society of New York have proposed, as a Prize Question for the year 1829, *The history, causes, and treatment of Typhus Fever.* The premium is *one hundred dollars.* The dissertations must be forwarded to Albany, on or before the 1st of December, (1828), and be accompanied with a sealed paper, containing the name of the author; which paper, as well as the dissertation, shall be endorsed with the same motto.

Dr GEORGE HOLCOMBE, Member of Congress from New Jersey, died at Allentown, on the 14th of January. Dr H. was one of those bright ornaments of our profession, who unite general erudition and science to medical talents and attainments. He was alike distinguished as a statesman and a physician.

Turkey.—Perhaps it is not generally known, that some attention has been paid to the science of medicine in Turkey. A regular Medical School and Military Hospitals are there established. One of these is connected with the medical school, and is well arranged. The hospital and the school are comprised under the name of *Tibchana.* The students are generally the children of those who have been useful to the state; they have a peculiar uniform, are boarded, receive a pension of twenty piastres a month, and are gratuitously instructed in the sciences requisite for the practice of medicine. They are taught, in addition to their vernacular tongue, the French, Italian, Arabic and Persian languages. At the head of the institution is the *hekim bachi*, or first physician of the emperor. CHANI-ZADEH, a member of the society of *Oulema*, has published, in the Turkish language, a treatise on Anatomy, accompanied with plates.—*Bulletin Univer. for October.*

Dr STEVENSON's neat translation of Orfila on Poisons and Asphyxia, did not reach us in time for the insertion, in the present number, of a notice which is already prepared.

An Encyclopedic Dictionary of Medical Science is announced in the German

Journals, to be written by Professors HUFELAND, GRAEFE, GIEBOLD, and RUDOLPHI of Berlin. The work will consist of from twenty-five to thirty volumes, in large octavo. The first volume is already published. Two are to appear annually. The price per volume is three and a half six dollars; for a copy on letter paper, four do.; on fine vellum, five do.

A Compendium of Anatomy, containing a concise and accurate description of the different parts of the human body, for the use of students, is now preparing, and will be published during the season. It will be in a portable form, and contain the latest discoveries, so as to serve as a pocket companion or vade mecum to the student of anatomy.

COLUMBIAN COLLEGE, *District of Columbia.*

We are happy to learn that this infant Institution is in a thriving condition. The third course of lectures, which has lately terminated, has been delivered to a class of between thirty and forty students; twelve of whom have since received the degree of Doctor in Medicine. A new college edifice has been erected, containing three good lecture rooms, large enough for one hundred and thirty or one hundred and forty students, a laboratory, and convenient dissecting rooms. A medical library is forming, so that every facility will be afforded to the medical student.

The third annual commencement of the Medical Department of the Columbian College was held in Washington city, March 12, 1828.

The following is a list of the graduates with the subjects of their theses:

Joseph S. Baker, of Georgia, on Inflammation.

Joseph Borrows, Jun. of the District of Columbia, on the Pathology of the Mucous Membrane.

John A. Bulfinch, of Massachusetts, on Tetanus.

Silas L. Condict, of New Jersey, on Digestion.

Robert A. Cony, of Maine, on the Stimulus of Distention.

John F. Edmonds, of Virginia, on Morbid Sensibility of the Seminal Organs.

Alexander M'D. Davis, of the District of Columbia, on Chorea St. Viti.

Charles W. Davis, of the District of Columbia, on Puerperal Fever.

Charles M'Lean, of the District of Columbia, on Humoral Pathology.

Harvey Lindsley, of New Jersey, on Scrofula.

William N. Waters, of the District of Columbia, on the use of Ol. Terebinthinæ.

Noble Young, of the District of Columbia, on March Miasmata as producing Fever.

PHILADELPHIA MEDICAL SOCIETY.

Officers for 1828.

President.—PHILIP SYNG PHYSICK, M.D.
Vice Presidents.—JOSEPH PARRISH, M.D. SAMUEL JACKSON, M.D.
Corresponding Secretaries.—JOHN BELL, M.D. B. H. COATES, M.D.
Treasurer.—D. F. CONDIE, M.D.
Orator.—CHARLES D. MEIGS, M.D.
Librarian.—ALFRED DRAKE, M.D.
Curators.—THOMAS H. RITCHIE, M.D. ALFRED DRAKE, M.D.
Library Committee.—H. L. HODGE, M.D. R. HUSTON, M.D. C. D. MEIGS, M.D.

The following lectures have been read before the Society during the summer and winter sessions:—

Dr Jackson. On Debility.
Dr Condie. On Acute Rheumatism.
Dr Meigs. On some diseases of the Spinal Marrow.
Dr B. H. Coates. On the Pathology of some Diseases of the Brain.
Dr Edward Jenner Coxe. On Acupuncturation.
Dr Horner. On the Gastro-Intestinal Mucous Membrane.
Dr Harris. On Drowning.
Dr Condie. On Hæmoptysis.
Dr Bell. On Gaseous Poisons.
Dr Brewster. On the Morbid Affection from Drinking Cold Water.
Dr Hodge. On Irritation.
Dr B. H. Coates. On the Relations of Physiology.
Dr D. Theodore Coxe. On Baths.
Dr Horner. On Inflammation.
Dr Emerson. On the New Doctrines of Syphilis.
Dr Hays. On the Pathology of the Tissues.
Dr Sharpless. On the use of Heat and Cold.
Dr Bond. On Respiration.
Dr Harris. On Poisoned Wounds.
Dr Hopkinson. On the Morbid Sympathies of the Brain and Stomach.
Dr Parrish. On the Evidences derived from Surgery in proof of a Vis Medicatrix Naturæ.
Dr E. Jenner Coxe. On Cynanche Trachealis.
Dr Rousseau. On the Importance of Exercise.

The following gentlemen have been elected members during the above period.

Honorary Member.

Dr Joseph Clark, Dublin, Ireland.

Junior Members.

Pennsylvania.—William Colquhoun; William W. Gerhard; John Van Buskirk; John B. Dick; Joseph Togno; Henry D. Dietrick; Daniel J. Brunner; Richard J. K. Sims; Adam R. Stouch; Gideon G. Palmer; Joseph Hickman; Jeremiah F. X. M'Credy; Henry Lippincott; George J. Janeway; George Huhn; Charles H. Bessonetts; Samuel G. Hobson; Edward Hallowell; William Keith; Joseph Carson; Hiram Corson; John H. Fager; Robert Rogers; William Whelan; Henry Gibbes; Edward Jenner Coxe, M.D.; James Ross Smith, M.D.; William C. Bann, M.D.
Delaware.—Lewis Summerl, M.D.; Thomas J. Dale.
New Jersey.—James S. Carpenter; Joseph Warrington.
Rhode Island.—Samuel B. Tobey.
New York.—Charles G. Fowler; Brian Burwell, M.D.; G. S. Fowler.
Virginia.—James H. Gregory; H. Montgomery; Matthew Jefferson; Francis R. Gregory; L. G. Wynn; Walton R. Juckett; Robert M. Dunbar; William R. Smith; Robert Carter Randolph; Thomas M. Boyle; Richard B. Alexander; John N. Sebrell; James R. Coleman; Watson Carr; G. S. Garth; William T. Maclin; James T. Barclay.
Maryland.—Charles W. Johnson; Burton Randall; John W. Anderson.
District Columbia.—James Jones.
North Carolina.—James J. Vernon; Reading S. Long; Larkins G. Jones; Jesse Carter; Michael O'Reilly.
South Carolina.—John M. Raiford; Evans Amacker; R. W. Gibbes; Martin Phillips; Arthur Gibbes; Joachim R. Saussy, M.D.
Georgia.—John A. Urquhart; Paul Eve; Leester Humphreys; Edward R. Ware.
Ohio.—Leonard Hanna.
Tennessee.—Robert N. Strong.
Quebec, Canada.—William Blumhart; René Bedard.
West Indies, Jamaica.—George Gray.

West Indies, St Croix.—Joseph Robinson.
Nova Scotia, Halifax.—Edward Brown.

Extracted from the Minutes of the Society.

JOHN R. W. DUNBAR,
Recording Secretary.

UNIVERSITY OF PENNSYLVANIA.

At a Public Commencement, held on the 27th of March 1828, the Degree of Doctor of Medicine was conferred upon *one hundred and thirty-three* gentlemen. We annex their names and the titles of their Theses, as announced by Dr Horner, Dean of the Medical Faculty.

Alabama.—John A. Cowles, External Applications.

Canada.—William Blumhart, Revulsion. *Joseph Haller*, Charbon provenant de la Contagion.

North Carolina.—George S. Bettner, Ulceration of the Intestines. *Edwin E. Slade*, Trachitis. *Armand J. De Rosset*, Cynanche Trachealis. *Harwood P. Perry*, Acute Rheumatism. *Henry M. Jeter*, Mercurial Disease. *William G. Hill*, Erysipelas Facialis. *Nathaniel M. Comer*, Bilious Continued Fever. *John L. Wright*, Cholera. *Reading S. Long*, Acute Peritonitis.

South Carolina.—John A. Wragg, Indigestion. *Lynch H. Deas*, Strictures of the Urethra. *Francis Johnson*, Vermes Intestinorum. *John M. Raiford*, Acute Rheumatism. *James T. Leckie*, On the Process employed by Nature in suppressing Hæmorrhage. *Evans L. Amacker*, Cynanche Trachealis. *James Jordan Vernon*, Pathology of Hæmorrhage.

District of Columbia.—James Jones, Diabetes. *Charles G. English*, Cathartics.

Delaware.—Alexander W. Reynolds, Cholera Morbus. *Phocion P. Lewis*, Hydrothorax.

Georgia.—John A. Urquhart, Dentition and Cholera Infantum. *W. Woodson Waddel*, State of the Biliary Secretion in Fever. *Edward R. Ware*, The Effect of the Eighth Pair of Nerves on Respiration and Digestion. *Thomas J. Charlton*, Melancholia and Hypochondriasis. *James B. Walker*, Topography, Climate, and Diseases of Burk county, Georgia. *Paul F. Eve*, Uterine Hæmorrhage. *Reuben Y. Reynolds*, Inversio Uteri. *Stephen Bailey*, Mercury.

West Indies.—Jos. H. Robinson, Cornus Circinata.

New-Jersey.—Hudson S. Burr, Scarlatina. *Joseph Pancoast*, Erectile Tissue. *Robert A. Hunt*, Ascites. *John B. Tuft*, Delirium Tremens. *Lewis B. Hunter*, De Hydrope. *Francis A. Ewing*, Disguised Intermittent. *Benjamin W. Blackwood*, Derangements of Digestive Organs. *Maurice Beesley*, Euphorbia Ipecacuanha. *William J. Johnson*, Lithotomy. *William M. Fenimore*, Pertussis. *John H. Stokes*, Erysipelatous Inflammation. *Joseph Warrington*, Diseases in the western part of Burlington county. *Charles Ellis*, Bubonocele.

Kentucky.—John Wilson Hunt, Hæmorrhoids.

Maryland.—Charles W. Johnson, Aneurism from Anastomosis. *John L. Dorsey*, Pneumonia Biliosa. *Thomas S. Herbert*, Lithotomy. *Burton Randall*, On the Identity of Electricity and the Nervous Influence. *John W. Anderson*, Rubeola, or Measles.

Massachusetts.—Edward Staples, Opium.

Pennsylvania.—Horatio N. Glentworth, Digitalis Purpurea. *Jesse K. Bonsall*, Phlegmasia Dolens. *Aristide Rodrigue*, Experiments on the use of the Ligature and Cupping Glasses in Poisoned Wounds. *Robert Bridges*, Neuralgia. *Anthony C. Percival*, Aneurism. *Samuel Stones, Jr.*, Nature and Properties of the Blood. *Charles Fox, Jr.*, Colic. *Charles Willing*, On the Primary Seat of Disease in Fever. *Andrew E. Kennedy*, Rheumatism. *William Whelan, Jr.*, Moxa. *William S. Zantzinger*, Erysipelas. *George Spackman*, Hydro-

thorax. *Uselmo A. Clark*, Cynanche Trachealis. *Robert Rogers*, Hæmorrhoidal Diseases. *Henry Umstad*, Acute Hepatitis. *Joshua Rhoads*, On the Circulation of the Blood. *Hiram Corson*, Tetanus. *Charles H. Bessonett*, Pertussis. *George Clymer, Jr.*, On Causes of Epidemic Diseases. *Jacob P. Thornton*, Cholera Infantum. *Charles Evans*, Rheumatism. *John B. Dick*, Hirudo Medicinalis. *Edward Chandlee*, Hemoptysis. *Adam R. Stouch*, Inversio Uteri. *John W. Reese*, Amenorrhœa. *Israel T. Smith*, Hepatitis. *Caspar Wistar Pennock*, Experimental Researches on the Efficacy and Modus Operandi of Cupping Glasses in Poisoned Wounds. *Jehu G. Peters*, Amenorrhœa. *Benjamin C. Tomlinson*, Case of Luxated Hip Joint. *William B. Watson*, Puerperal Fever. *Henry L. Aitkin*, Jaundice. *Jeremiah F. X. M'Credy*, Miasmata. *George Kuhn*, Dysentery. *William L. Vanhorn*, Dysentery. *Jacob Wagenseller*, Epidemic of Bucks county. *Solomon Temple*, Hydrorachitis. *William M. Fahnestock*, Myrica. *Gideon G. Palmer*, Hæmorrhoids. *Enoch P. Hoopes*, Hepatitis Acuta. *Robert Morton*, Colica Pictonum. *Charles Pearson*, Gonorrhœa. *Alexander H. Barnitz*, Acute Rheumatism. *Nathaniel B. Goodman*, Functions of the Lungs. *Henry C. Pratt*, Amputation.

Rhode Island.—Samuel B. Tobey, Opium and its Officinal Preparations.

Tennessee.—Reuben A. Gentry, Fractures, Dislocations, and Gun Shot Wounds. *Robert N. Strong*, Extirpation of the Parotid Gland.

Virginia.—James H. Gregory, Bilious Fever. *Francis R. Gregory*, Strictures of the Urethra. *Andrew Barclay*, Empyema. *Jos. G. Gray*, Digestive Mucous Membrane. *Henry Myers*, Paralysis. *Frederick Horner*, Altered condition of the Tongue in Disease. *Samuel P. Byrd*, Hepatitis. *James T. Barclay*, Saccharine Matter. *Littleberry G. Wynn*, Smyrnium Trifoliatum. *John R. W. Dunbar*, On the Structure, Functions and Diseases of the Nervous System. *George Stubblefield*, Fractures of the Extremities. *William Collins*, Mania a Potu. *Frederick W. Harrison*, Amenorrhœa. *Peyton R. Berkeley*, Injuries of the Head. *George W. Tinsley*, Deranged Menstruation. *James T. Boyd*, Cynanche Trachealis. *William W. Carrington*, Hydrophobia. *Richard B. Alexander*, On Juniperus Sabina and Juniperus Virginiana. *James B. Maclin*, On the Resemblance and Means of distinguishing Chronic Hepatitis and Tubercular Consumption. *Robert Braden*, Remittent Fever. *Thomas E. Spencer*, Gonorrhœa. *Joel B. Sturdivant*, Acute Hepatitis. *Theophilus Meade*, Mercurial Salivation. *Hughart Montgomery*, Wounds of the Articulations. *Augustus G. D. Roy*, Hepatitis. *Thomas W. Bass*, Icterus or Jaundice. *William T. Maclin*, Use of Iodine in Bronchocele. *Thomas Parham*, Cholera Infantum. *William Finney, Jr.*, On the Process adopted by Nature, in the Restoration of Wounds, and other Injuries of the Human System. *John Batte*, Intermittent Fever. *Henry Lee Heiskell*, Extra Uterine Pregnancy. *James C. Hazlewood*, Acute Gastritis.

New-York.—William N. Duane, Purulent Ophthalmia. *Charles G. Fowler*, Tubercular Phthisis.

PHILADELPHIA MEDICAL INSTITUTE.

The summer course of Lectures in the Institute will commence on the second Monday in April, and terminate during the last week in October.

Dr N. CHAPMAN, on the Practice of Medicine.
Dr W. E. HORNER, on Anatomy.
Dr W. P. DEWEES, on Midwifery.
Dr SAMUEL JACKSON, on Materia Medica.
Dr J. BELL, on the Institutes of Medicine, and on Medical Jurisprudence.
Dr J. K. MITCHELL, on Medical Chemistry.
Dr H. L. HODGE, on the Principles of Surgery.
Dr THOMAS HARRIS, on Operative Surgery.

INDEX TO VOLUME V.

Abscess, gangrenous, of the Lungs, 200
Absorption of Medicines, 251, 261
and transpiration in Water, . . 380
Experiments on the passage of substances into the Urine, 237
Gamberai on, . 194
Abscess of the Loins, discharged by the Bronchiæ, . . 464
Acetate of Lead in Colica Pictonum, ... 20
Adams' Cases of diseased Heart, 114
Adipocere, Formation of, . 471
Affusions of Cold Water in Inflammations, ... 58
Agents, Physical, Influence of, 370
Air, Influence of, . . 377
Alloneau on Phlegmasia Dolens, 440
American Journal in the French Language, . . . 244
Amenorrhœa, Cure of, . . 211
Ammon on a singular effect of Cantharides, . . . 449
Amputation of Cervix Uteri, 232, 470
Amussat on the Biliary Ducts, 436
on High Operation, . 462
on Lithontrity, . 467
Analytical Reviews, 85, 347
Anatomy, . . 194, 435
Anatomy, Compendium of, . 477
Aneurism by Anastomosis, . 229
Glutæal, . . 459
Ligature beyond the Tumour, 226, 227
Carotid, . . 461
Axillary, . 465, 468
Animal Heat, . . 382, 386
Antimony in large doses, . 292
Antimony-and-Potassa, Oxalate of, ... 475
Argentum Nitratum in Caries, 468
Arrow Root distinguished from Wheat, . . . 475
Arsenic in Headach, . . 268
Artificial Joints, . 1, 428
Artificial Joint cured by Excision, 468
Arthaud, Dr, on the Spleen, . 435
Asphyxia, . 372, 384, 387
Axillary Aneurism cured, 465, 468

Barium, Deutoxide, a new mode of preparing, . . 471
Baths, Sand, . . 449
Bayle on Mania from Gastro-Enteritis, ... 447
Beck, Dr T. Romeyn, his Address noticed, . . . 432
Bell, Charles, on Strictures of the Rectum, . . . 232
Belladonna, preventive of Scarlet Fever, . . . 447
Bettner, George S., on Ulcers of the Intestines, . . 312
Bezoar, Human, . . 472
Bibliographical Notices, 184, 423
Bichromate of Potass, effects of, 211
Biliary Ducts, Structure of, . 436
Bladder, punctured above the Pubes, ... 233
Blood-stains, how distinguished, 458
Bond's Case of Diseased Brain, 65
Bouillaud on the Functions of the Cerebellum, . . . 197
Bowels, Constipation of, . 451
Boyle on Moxa, . . 233
Brain and Nerves, Abscess of, 65
Bridges on the Residuum of Nitre after a red heat, . . 241
Bronchiæ, Malformation of, . 437
New form of diseased, 62
Broussais on Gastro-Enteritis, . 445
Brunninghausen on the Non-Mercurial treatment of Syphilis, 462

Buchez on the Study of Medicine, 444
Burn, useful in Epilepsy, . 451

Calculus containing Mercury, 473
Callus, Nature of, . . 4
Cancer, suspected, . . 269
of Lips, . . 465
Cantharides, singular effect of, 449
Caries, . . . 468
of the Tibia, . . 249
Carious Joints, Excision of, . 102
Carus, Dr, on the connection of Ovum, . . . 199
Carotid Artery tied, . . 229
Aneurism, . . 461
Case of Preternatural Joint, . 11
Communication between a cavity in the Ovaria and the Bladder, . 12
Lumbar Abscess connected with Ascites, . 38
Lumbar Abscess connected with Empyema, 464
Local Gout relieved by Vaccination, . 46
Copious Affusions of Cold Water in Inflammations, . 58, 59
Abscess of the Brain and Nerves, . . 65
Gangrene of the Lungs, 95
Pulmonary Apoplexy, . 97
Death from a Wound received in Dissection, 106
Fatal Erethism of the Stomach, . . 107
Remarkable Pulsation of the Veins, . . 110
Unusual Constipation, 111
Deformed Stomach, . 112
Ruptured Cœcum, . ib.
Diseased Hearts, . 114
A Tailed Man, . 117
Claimed for the use of Swaim's Panacea in the Pennsylvania Hospital, . . 175
The use of Swaim's Panacea, 154, 162, 178, 183
Mucous Membrane of the Rectum visible to the Eye, . . 202
Mucous Membrane considered as specimens of the healthy colour, 202
A Cyst in the Tuber Annulare, . . 206
Tænia, cured with Pomegranate, . . 209
Case of Chorea, cured with Hydrocyanic Acid, . 212
Disease induced by Iodine, and afterwards cured, . . 213
Chorea cured by Depletion and Iodine, . 213
Acute Gastro-Cerebral Inflammation, . 217
Acute Rheumatism and Inflammation of the Spinal Marrow, . ib.
Murder by poison, with the Medico-Legal investigation, . 218
Ligature beyond the Tumour, applied for the cure of Aneurism, 226, 227, 466
Dislocated Humeri reduced after seven, and ten and a half months, 228
Dislocated Femur reduced after three months, ib.
Ossified Septum of Penis extirpated, . . 229
Ligature of the Carotid Artery for Aneurism by Anastomosis, . ib.
Dilated Pupils treated by the application of Lunar Caustic to the Cornea, . 229, 230
Fracture of the Humerus by Muscular Contraction, . . 230
Excision of a portion of the Humerus . 231
Rupture of the Bladder, ib.
Empyema with Pneumothorax, . . ib.
Empyema with Lumbar Abscess, . . 464
Osteo-Sarcoma extirpated from the Lower Jaw, 232
Necrosis of the Lower Jaw, . . 233
Puncture of the Bladder, ib.
Empyema, . . 234
Phlebitis, . . ib.
Cæsarian Operation performed twice, . 235
Hysterotomy per Vaginam, ib.
Premature Labour artificially induced, . 236
Caries of Tibia, . 241
Ulceration of Scrotum, 257
Phthisis Incipiens cured by Digitalis, . 261

Case of Headach, Chronic, cured, 268
Diseased Mammæ, . 269
Phlegmasia Dolens, . 278
Phlegmasiæ, treated with large doses of Antimony, . . 292
Irritability of Stomach, 307
Ulceration of Intestines, 312
Stricture of Urethra, . 343
Ununited Fracture, . 428
General Gout, . . 445
Polysarchia cured, . 453
Spina Bifida cured, . ib.
Excision of Nerves in Neuralgia, . . 459
Extirpation of deep seated Tumour of Neck, 460
Carotid Aneurism, . 461
Rupture of Jejunum, . ib.
Recto-Vesical Operation, 464
Lithontrity, . . 467
Wounds from Rabid Animals, . . 465
Axillary Aneurism, 465, 468
Labour artificially excited, 448, 470
Castor Oil in Ring-Worm, . 449
Cataract Needle, Jacob's, . 103
Catholicon, Potter's, noticed, 149
Caventou on Human Bezoar, . 472
Cazenave and Jobert, on a Cyst in the Tuber Annulare, . 206
Cephalalgia cured by Arsenic, 268
Cerebellum, functions of the 197
Cervical Vertebræ, Luxations of, 466
Cesarian Operation, . 235, 236
Chalybeate Waters, . . 475
Chambers on Gangrene of Lungs, 200
Dr, Case of, . 233
Chemistry and Pharmacy, 237, 471
Chemical nature of Cinchona, . 474
Chemical Manipulation, Faraday on, ... 346
Cheyne on Feigned Diseases, 99
on Erethism of the Stomach, . . 107
Chloride of Lime in Itch, . 450
Chlorine Fumigations in Phthisis, ib.
Chew's Urethro-tome, . 341
Chorea, Hydrocyanic Acid in, . 212
Iodine in, . . 213
Christison's Case of Poisoning, 218
Chromate of Potass, effects of, 211
Cinchona, nature of, . . 474
Circulation in Lungs influenced by Pneumo-gastric Nerves, 265
Civiale's Operations, . 74, 467
Clarke, Joseph, on Gangrene of the Mouth, . . . 205
Cloquet's Case of Ruptured Bladder, . . 231
And Larrey's Case of Fracture from Muscular Contraction, 230
Club-Foot, Mill on, . 245
Coates, Dr Reynell, on Quack Medicines, . . . 175
Cœcum, Ruptured, . . 112
Cold, Influence of, . . 386
Water in Inflammations, 58
Colica Pictonum, treatment of, 16, 214, 215, 450
Colles on dissecting Wounds, . 106
Colson on Mercurial Tremors, . 443
Colour of Mucous Membranes, 201
Columbian Medical College, notice of, . . . 477
Compendium of Anatomy, . ib.
Compression in Acute Rheumatism, . . . 209
Condie on Hemoptysis, . 23
Conium Maculatum in Itch, . 453
Connection of the Ovum with the Uterus, . . . 199
Constipation, unusual Cases of, 111, 451
Contagion in Yellow Fever, . 322
Convention, Medical, in Ohio, 243
Cooke and Short, Drs, New Journal, ... 244
Cooper, Mr Bransby, his operation for Axillary Aneurism, . 468
Copaiba, Eruption produced by, 72
Coxe's Case of Gout, cured by Vaccination, . . . 46
Cramp in the Stomach cured by Tartar Emetic, . . 213
Crampton on Excision of Carious Joints, . . 102
Case of Constipation, 111
On Excision of Lower Jaw, . . 116
Cumin on Bichlorate of Potass, 211
Cunningham on Stramonium, . 252
Cutaneous Diseases, uses of Iodine in, . . . 452
Cuvier on the Hair, . . 436
Cyanosis from Phthisis Pulmonalis, ... 204
Cynanche Parotidea, Iodine in, 212
Cyst, Gelatinous, in Tuber Annulare, ... 206

Dance on Vomiting in Pregnancy, 235
Darrach on a variety of Bronchitis, 62
Davis' Operative Midwifery noticed, . . . 184

Davis' Case of Pulsation in the Veins, . . . 110
Deaf and Dumb Institution, Epidemic in, . . . 47
De Berustadt on Phthisis with Cyanosis, . . . 204
Delpech on Taliacotian Operation, 466
Denarcotized Laudanum, . 473
Deutoxide of Barium, a new mode of preparing, . . 471
Difficult Labour, . . 470
Digestion, Influence of Eighth pair of Nerves on, . 264, 438
Digitalis, in Phthisis Pulmonalis, 261
in Scrofula, . . 368
Dislocations, old, reduced, . 228
Dispensatory, Eclectic, noticed, 423
Dissection, wounds in, . 106
Dothinenteritis, . . 312
Drake on Cramp in Stomach, 213
Dublin Hospital Reports, review of, ... 85
Ducts, Biliary, structure of, . 436
Duges on Malformation of the Heart, . . . 437
Duncan on Empyema and Pneumothorax, . . . 231
Dupuy's Experiments on Eighth pair of Nerves, . . 438
Dupuytren on Spasmodic Strictures, . . . 234

Ecchymoses of the Skin, . 446
Eclectic Dispensatory noticed, 423
Edwards on Physical Agents, reviewed, . . . 370
Electro-Magnetism, Green's, noticed, . . . 192
Emlen, Dr, on Yellow Fever, . 321
Empyema, . . 234, 454
with Pneumo-Thorax, 231
Encyclopedic Journal, . 476
Endermic Medication, 251, 260
England, Remittent Fever of, 451
Enteritis, . . . 312
Epidemic resembling Influenza, 47
Epilepsy, cured by a Burn, . 452
Erethism of the Stomach, Cheyne on, . . . 107
Escharotic effects of Bichromate of Potass, . . . 211
Evolution of Fœtus, . . 470
Excision of the Lower Jaw, . 116
of the Humerus, . 231
of Carious Joints, . 102
of Artificial Joint, . 468
Experiments on Pneumo-Gastric Nerves, . . 264, 438, 439

Faraday on Chemical Manipulation, reviewed, . . 347
Feigned Diseases, Cheyne on, 99
Femoral Artery, a variety in, 111
Femur, Fractures of Neck of, 462
Fever, Remittent in England, 451
Yellow, . . 321
Dr Marsh on, . . 186
Dr Miller's Theory of, compared with the Modern Physiological Doctrine, . . 134, 146
Filings of Silver, in Intermittents, . . . 210
Fœtus, Evolution of, . . 470
Fluor Albus, cured, . . 211
Fogs, influence of, (in concentrating Miasma, . . 326, 338
Formation of Adipocere, 471
Fracture from Muscular Contraction, . . 230
of Neck of Os Femoris, 462

Gangrenous Abscess of Lungs, 200
Gangrene of the Mouths of Children, . . . 205, 206
Gastro-Cerebral Inflammation, a Case of, . . 217
Enteritic Theory of Fever, by Dr Miller, 134, 147
Enteritis, . . 445
excited by an Emetico Cathartic, 448
causing Mania, 446
Gendrin on Hemorrhage from Varices, ... 232
General and Eclectic Dispensatory noticed, . . . 423
Georget, Medico-Legal observations on Insanity, . . 454
Gestation, duration of, . . 468
Glossitis, . . . 448
Gluteal Aneurism, . . 459
Gonorrhœa, Antiphlogistics in, 467
Graduates, List of, University of Pennsylvania, . . 479
Graduates, List of, Columbia Medical College, . . 477
Graves on the Stethoscope, 95, 98
Gr..efe's case of Cæsarian Operation, . . . 236
Green's Electro-Magnetism 192
Griffith, Dr R. E. on Quack Medicines, . . . 180
Guerin de Mamers on Colica Pictonum, . . . 214

Guibert on Amenorrhea and Fluor Albus, . . . 211

Hair, nature of, . . 436
Hare, Dr, on Denarcotized Laudanum, . . . 473
Harlan, Dr, on Diseases produced by Lead . . . 16
Harlan's case of Stricture of Urethra, ... 343
Harlan, Dr, on Formation of Adipocere, . . . 471
Hart's case of Deformed Stomach, . . . 112
Heart, cases of Diseased, . 113
Misplaced, . . 436
Malformation of, . 437
Heat, Animal, . . 382, 386
Hematemesis excited by per-carbonated Hydrogen, . . 450
Hemeralopia, lunar caustic in, 229
Hemlock in Itch, . . 453
Hemoptysis, Condie on, . 20
Hemorrhage from Varicose Veins, 232
Hewson on Artificial Joints, . 1
on Eruption from Balsam Copaiba, . 72
High Operation, . . 462, 467
Holcombe, Dr, Death of, . 476
Hopkinson on Quack Medicines, . . 178
on Irritability of Stomach, . . 307
Horn, Dr, on Caries of the Tibia, 249
on the Absorption of Medicines, . 251
Horner, Dr, on the colour of Mucous Membranes, . . 201
Houston's case of variety in Femoral Artery, . . . 111
Hufeland on the Ratio of the Sexes, . . 196
on Scrofula, reviewed, . . 118, 357
Human Bezoar, . . 472
Huston, Dr, on Phlegmasia Dolens, ... 278
Hydrocyanic Acid in Chorea, . 212
Hydrogen, percarbonated, . 450
Hydrophobia, . . . 465
Hydrorachitis, cured, . . 453
Hydrosulphurous Waters, in Colica Pictonum, . . 450
Hysterotomy per Vaginam, . 235

Inflammation and Irritation, Prus on, ... 190
Influenza, Wood's account of an Epidemic resembling, . 47
Inoculation and Vaccination in Sheep, . . . 441
Insanity, Medico-Legal discussion of, ... 453
Intermittent Fever, filings of silver in, ... 210
Internal Iliac Artery, secured, . 459
Intestinal Ulcerations, . . 312
Iodide in Cynanche Parotidea, 212
Chorea, . . 213
Polysarchia, . . 453
Iodides of Sulphur in Cutaneous diseases, ... 452
Iron, Precipitation of, . . 475
Irritation and Inflammation, Prus on, ... 190
Itch, cured by Chloride of Lime, 450
Conium Maculatum, . . 453

Jacob on a new Cataract needle, 103
on a peculiar Ulcer of Eyelids, ... 105
on a malformation of the Vertebral Column, . 117
Jackson, Dr S., of Philadelphia, on Quack Medicines, . . 180
Jackson, Dr S., of Northumberland, on Gangrene of the Mouth, . 206
Jalapine, Pelletier on the Sulphate of, ... 210
Jejunum, rupture of, . . 461
Jobert and Cazenave on an encysted Tuber Annulare, . . 206
Jones on Suction in Constipated Bowels, ... 451
Joints, Preternatural, Hewson on, 1
Rodgers' case of, . 468
Jouffroy on Sleep, . . 194
Journal des Sciences Naturelles de l'Amerique du Nord, . 244
Journal, Boston Medical and Surgical, . . 476
Philadelphia Monthly, ib.

Kirckhoff, Dr, on Stramonium in Neuralgia, . . . 209
Kitchen, Dr, on Antimony in large doses, ... 292

Labour artificially excited, . 468
premature, . . ib.
difficult, . . 470
Lallemand on Spasmodic Strictures, ... 235

Lantz's Case of Cæsarian Operation, ... 236
La Roche's, R., account of Lithontrity, . 74
J. B. on Ununited Fractures, . 428
Larrey and Cloquet on Fractures from Muscular Contraction, 230
Laudanum, Denarcotized, . 473
Lawrence's Case of Osteo-Sarcoma of Lower Jaw, . . 232
Lawrence's Case of Puncture of Bladder above the Pubis, . 233
Lead, Diseases produced by, 16
Sheets of, as dressings for Ulcers, . . 230
Leaves of Stramonium in Neuralgia, ... 209
Lectures in Philadelphia Medical Institute, . . . 480
Lehot's New Theory of Vision, 197
Libbald on Inoculation of Sheep, 442
Ligature beyond Aneurismal Tumour, . . 226, 227, 466
Lime, Chloride of, a Cure for Itch, 450
Lips, Cancer of, . . 465
Lisfranc on Amputation of Uterus, 262, 470
Liston's Case of Lithontrity and Lithotomy, . . . 467
Lithontrity, . . 77, 79, 467
Lithotomy above the Pubis, 462, 467
from the Rectum, 464
success of different methods of, . 230
Liver, Pathology of, . . 201
Lower Jaw, Osteo-Sarcoma of, 232
Lumbar Abscess, connected with Ascites, . . . 38
Lumbar Abscess, connected with Empyema, . . . 464
Lunar Caustic in Hemeralopia and Mydriasis, . . . 229
Lungs, soundness of, how ascertained, . . . 203
Luxations of Cervical Vertebræ, 466
Lymphatics, Gamberai on 194

M'Clellan's Case of Ossified Penis, 229
of Ligature on Carotid Artery, ib.
Malformation of the Œsophagus, 437
of the Bronchiæ, ib.
Mammæ, Affections of, . 269
Manna, Gum Tree, . . 448
Marsh, Dr, on Fever, . . 186
on Vapour Bath in Tetanus, . . 117
MATERIA MEDICA, . 209, 447
Medical Society, Report of, on Quack Medicines, . . 149
Medical Society, Officers of, . 477
Lectures before, ib.
New Members of, 478
Medical Society, Report of, on Small Pox, . . . 400
Medical Society, Proceedings of, 149, 400
Medical Society of New York, 431, 476
Medical Evidence, . . 433
in a Case of Poisoning, 218
MEDICAL JURISPRUDENCE, 218, 454
Medical Convention in Ohio, 243
in Philadelphia, 432
MEDICAL LITERATURE, . 127
Medical Institute of Philadelphia, 480
College of Columbia, 477
Medicine, Study of, . . 444
Medico-Legal Discussion on Insanity, . . . 454
Meirien's Instruments for Lithontrity, . . . 79
Melanosis, Chemical Nature of the Matter of, . . 472
Menorrhagia, Tannin in . 210
Mercury in Scrofula, . . 365
Mercurial Tremors, . . 442
Mercury in a Calculus, . 473
MIDWIFERY, . . 235, 468
Davis' Operative, noticed, . . 184
Miller, Dr, Works of, . . 127
MISCELLANEOUS, . 243, 476
Morphia, new mode of preparing, 473
Morris' Case of Dislocated Femur, 228
Moulin, Dr, on the Pomegranate in Tænia, . . . 209
Moulin, Dr, on Amenorrhœa and Fluor Albus, . . 211
Moxa, M. Boyle on . . 233
Mucous Membranes, Dr Horner on the Colour of, . . 201
Murder by Poison, Trial for, . 218
Mydriasis, Lunar Caustic in, . 229

Neck, Tumour of, extirpated, 460
Necrosis of Lower Jaw, . 233
Nerves, regeneration of, . 438
Pneumo-gastric, experiments on, 264, 438
Excision of, in Neuralgia, 459
Neumann on Iodine in Cynanche Parotidea, . . . 212
Neuralgia, Stramonium in, . 209
Excision of Nerve in, 459

New Medical Doctrine, by Dr Prus, . . . 190
Nicol on Argentum Nitratum in Caries, . . . 467
Neill, Dr, on Club-Foot, . 245
Non-Mercurial Practice in Syphilis, 462
Non-Reunion of Fractures, . 428

Ohio, Medical Convention in, 243
Ollivier on Ecchymoses of Skin, 446
Operations for Stone, by M. Civiale, ... 74
Operative Midwifery, by Dr Davis, 184
Opium, Saffronized Tincture of, a Cure of Polypi, . . 447
Oppenheim on Non-Mercurial practice in Syphilis, . . 464
Optic Nerve, canal in, . . 436
Orfila on detecting Blood stains, 458
ORIGINAL COMMUNICATIONS, 1, 245
Ossified Septum of the Corpus Cavernosum Penis extirpated, 229
Œsophagus, Malformation of, 437
Osteo-Sarcoma, removed from the Lower Jaw, . . . 232
Ovum, Connection of, to the Mother, ... 199
Oxalate of Potassa-and-Antimony, 475

Panacea, Swaim's, Report to Medical Society on, . . 149
Pariset on Lead to Ulcers, . 230
Parrish, Dr, on Affections of the Mammæ, . . . 269
PATHOLOGY, . . 200, 440
Paul's case of Diseased Ovarium, 12
Pelletier on a supposed Sulphate of Jalapine, . . . 210
Peltz on Iodine in Chorea, . 213
Pennock's Experiments on Poisoned Wounds, . . 243
Pennsylvania University, Graduates of, . . . 479
Periostitis, . . . 462
Peroxide of Potassium, formed from Nitre, . . . 241
PHARMACY AND CHEMISTRY, 237, 471
Philadelphia Medical Institute, 480
Philips on the Residuum of Nitre after a Red Heat, . . 242
Phlebitis, cases of, . . 234
Phlegmasia Dolens, . 278, 448
Phlegmasiæ treated with large doses of Antimony, . . 292
Phthisis, with Cyanosis, . 204
Incipiens, Digitalis in, 261
Pulmonalis, Fumigations of Chlorine in, . 450
Physick's, Dr, Experience of Arsenic as an External Application, ... 260
Physical Agents, Edwards on, reviewed, . . . 370
PHYSIOLOGY, . . 194, 438
Pissina, Dr, on Inoculation of Small Pox, . . . 442
Placenta, removal of, . . 471
Pneumophthisis Cyanotica, . 204
Pneumothorax, with Empyema, 231
Pneumo-Gastric Nerves, Experiments on, . . 264, 438
Pneumonia, Antimony in, . 292
Poisoning, Trial for, . . 218
Poisoned Wounds, New Experiments on, . . . 243
Polypi, Nasal, . . . 447
Polysarchia cured by Depletion and Iodine, . . . 453
Pomegranate, Bark of the root of, in Tænia, . . . 202
Pommerais's case of Excision of a portion of the Humerus, . 231
Porta on Tannin in Menorrhagia, 210
Potassa-and-Antimony, Oxalate of, 475
Potatoe Starch distinguished from Arrow-Root, . . . 475
PRACTICE OF MEDICINE, 209, 447
Precipitation of Iron from Chalybeate Waters, . . 475
Premature Labour, Artificially induced, . . . 236
Preternatural Joints, Hewson on, 1
Prevost's Experiments on Regeneration of Nerves, . . 438
Prize Question, On Typhus Fever, ... 476
Prus on Irritation and Inflammation, . . . 190
Prussic Acid in Chorea, . 212
Puncture of the Bladder above the Pubis, . . . 233
Pulsation of the Veins, remarkable, ... 110

Quack Medicines, Report to the Medical Society on, . 149
QUARTERLY SUMMARY OF INTELLIGENCE, . . 194, 435
Question, Prize, by Society of New York, . . . 476
Quinine, in Intermittents, . 450
Externally applied, 452
Sulphate of, . . 474

Rabid Animals, Wounds from, 465

Randolph, Dr, on a peculiar Ulcer of the Scrotum, . . 257
Ranque on the treatment of Colica Pictonum, . . 215
Rectum, Strictures of, . . 232
Recto-Vesical Operation, . 464
Regeneration of Nerves, . 438
Remittent Fever in England, . 451
Removal of the Placenta, . 471
Report to the Medical Society on Quack Medicines, . . 149
Residuum of Nitre after a red heat, 241
Respiration, . . 385, 389
Before Birth, . 439
Retrospective Review, . 127
Retrospective Review of Miller's Works, . . . ib.
Review of Hufeland on Scrofula, 118, 357
Faraday on Chemical Manipulation, . 347
Edwards on Physical Agents, . . 370
Dublin Hospital Reports, 85
Rheumatism, Acute, Compression in, . . 209
Terminating in Rachitis, . . 217
Treated with large doses of Antimony, 298
Richards, Case of Gastro-Cerebral Inflammation, . . 217
Ring Worm, cured by Castor Oil, 449
Ritgen on Respiration of Infants, when the Head only is born, 439
Rodgers, J. Kearney, Case of Excision of Bones in Artificial Joint, . . . 468
Roller, Compression in Acute Rheumatism, . . 209
Rublock on Vaccination and Small Pox in Dresden, . . 441
Rupture of the Bladder, . 231
Rupture of Jejunum, . . 461

Salivation, Excessive, Drs Graves and Stokes on, . . 99
Sand Baths, . . . 449
Scarlet Fever, prevented by Belladonna, . . . 447
Schenk's Rare Case of Cæsarian Operation, . . . 235
Schönlein on Phthisis with Cyanosis, . . . 204
Scrofula, Hufeland on, . 118, 337
Scrofula, Treatment of, . . 361
Scrofulous Affections of Mammæ, 269
Scrotum, Peculiar Ulceration of, 257
Seton in Ununited Fractures, . 428
Serre on Lunar Caustic for Dilatation of the Pupil, . . 229
Sexes, Hufeland on the ratio of, 196
Shaw's Criticisms on Mr Wardrop's Case of Aneurism, . 226
Shekelton, Mr, his death from a wound received in dissection, 106
Short and Cooke, Drs, new Journal, ... 244
Silver Filings in Intermittent Fever, ... 210
Skin, Ecchymoses of, . . 446
Skinner on Vaccination in North Carolina, . . . 243
Sleep, Jouffroy on, . . 194
Small Pox, Epidemic of, 1827, 28, 400
Smith, Dr N. R. on the Pathology of the Liver, . . . 201
Smith, Mary, Tried for Poisoning, 218
Smith's Cases of Humerus reduced seven, and eleven months after Dislocation, . . 228
Smith's, Dr J. Augustine, Case of Necrosis of the Lower Jaw, 233
Smith, Samuel B. on Digitalis in Phthisis Incipiens, . . 261
Solera's Case of Hysterotomy per vaginam, . . . 235
Souberbeille on High Operation, 467
Soundness of the Lungs, Test for, 208
Spasmodic Strictures, Dupuytren and Lallemand on, . 234, 235
Speer's Case of Ruptured Cœcum, 112
Spinal Marrow, Inflammation of, consequent to Rheumatism, 217
Spina Bifida, cured by Punctures, 453
Spleen, Structure and use of, . 435
Spontaneous Evolution of the Fœtus, . . . 470
Stramonium, Observations on, . 252
Stafford's Urethro-tome, . 233
Stethoscope, Sketch of the use of, . . . 87, 94
Stokes on the Stethoscope, 95, 98
Stomach, Unusual Form and Structure of, . . . 112
Stomach, Irritability of, . 307
Stone, M. Civiale's Operation for, 174
Stramonium, Tincture of the leaves of, in Neuralgia, . . 204
Strictures of the Rectum, Bell on, 232
Strictures, Spasmodic, Dupuytren and Lallemand on, 234, 235
Strictures in Urethra divided, 341
Stuart on Hydrocyanic Acid in Chorea, . . . 212
Study of Medicine, . . 444
Subclavian Artery tied, 465, 466, 468
Sulphate of Quinia, . . 474

Sulphur, Iodides of, in Cutaneous Diseases, . . . 452
SURGERY, . . 226, 459
Syphilis treated without Mercury, ... 462

Tailed Man, Jacob's case of a, 117
Taliacotian Operation, . 465, 466
Tannin in Menorrhagia, . 210
Tartar Emetic, Cramp in the Stomach from, . . . 213
Temperature, Influence of, 376, 391
Tessier's, Dr, New Journal, 244
Test, New, for Sound Lungs, 208
Tetanus, Vapour Bath in, . 117
THERAPEUTICS, . . 209, 447
Tibia, Caries of, . . . 249
Tillet on Copious Affusions of Cold Water in Inflammations, 58
Tænia, Bark of the Root of Pomegranate in, . . . 209
Tænia, Cure for, . . 211
Transactions of New York Medical Society noticed, . . 431
Transpiration and Absorption in Water, ... 380
Transpiration and Absorption in Man, . . . 385, 393
Transylvania Journal of Medicine, 244
Tremors, Mercurial, . . 442
Tube Chemistry, . . . 352
Tuber Annulare, Cyst in, . 205
Tumour of Neck Extirpated, 465, 466
Turkey, Medical Science in, 476

Ulcers dressed with Sheet Lead, 230
Ulceration, peculiar, of Scrotum, 257
of Intestines, 312
University of Pennsylvania, Graduates in 1828, . . 479
Ununited Fractures, . . 428
Urethra, Stricture of, divided, 343
Urethotome, Stafford's, . 233
Chew's, . . 341
Urine, passage of substances into the, ... 237
Uterus, Amputation of neck of, 232, 470

Vaccination in Sheep, . . 441
Vaccination for Gouty Inflammation, ... 46
Vaccination in North Carolina, 243
Philadelphia, 400
Dresden, . 441
Turkey, . 442
Vander Meer on Inoculation and Vaccination in Sheep, . 441
Vapour Bath in Tetanus, Marsh on, 117
Variety unusual in the Femoral Artery, ... 111
Varicose Veins, Hemorrhage from 232
Variola in Philadelphia, . 400
Dresden, . . 441
Varioloid, ... 400
in Sheep, . . 442
Varlez on Compression in Acute Rheumatism, . . 209
Vertebræ, Cervical, Luxations of, 466
Vision, New Theory of, . 197
Vomiting in Pregnancy, . 235

Wahler's Experiments on the Passage of Substances into the Urine, concluded, . . 237
Wardrop's case of Aneurism criticised, ... 226
Wardrop's Second Case of Ligature beyond the Tumour in Aneurism, . . . 227
Ware's, Edward R., Experiments on the Eighth Pair of Nerves, 264
Warren on Excision of Nerve in Neuralgia, . . 459
Extirpation of a Tumour, 460
Case of Carotid Aneurism, . . 461
Warts removed by Bichromate of Potass, . . . 211
Waters, Chalybeate, . . 475
Wedemeyer on the Optic Nerve, 436
Wenzel's case of Recto-Vesical Operation, . . . 464
Wheat, distinguished from Arrow-Root, ... 475
White, Dr, secured Internal Iliac Artery, ... 459
Wilson on a Case of Diseased Ovaria and Bladder, . . 12
Wood's Account of an Epidemic resembling Influenza, . 47
Wounds received in Dissection, Dr Colles on, . . 106
Wounds from Rabid Animals, 465
Wright's Case of Lumbar Abscess connected with Ascites, . 38

Yellow Fever, why confined to neighbourhood of Water, . 321

Zona, Epidemic, . . 451